Home Computing WEEKLY

NEW

An Argus Specialist Publication

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38p

COMPUTER CHAIN STORES RAPPED

Sales staff are giving misleading advice on computers to customers in some chain stores, it is claimed.

And complaints led Nigel Backhurst, secretary of the Computer Trade Association, to tour 40 stores posing as a customer.

He said most of the 30-40 letters and phone calls to the CTA talked of salespeople who claimed home computers could do more than was possible

But two big groups told Home Computing weekly of their extensive training courses.

Mr Backhurst said: "I was told I could run 5,000 business records on a 16K Spectrum with VU-file

"In another store I was told the computer worked in a language called English, which will be a surprise to Clive Sinclair. And they said I could get Prestel and Teletext without add-ons.

"I told one salesman I wanted to run the Wordstar word processing program and he said it would work on a VIC-20 with an expansion memory pack. Now Wordstar needs the CP/M operating system and far more memory than the VIC-20 can run.

"I've had about 40 complaints and about 20 per cent of them have been along these lines."

However, some domestic appliance shops had given helpful service. And in a branch of Wigfalls, where he asked if the ZX81 would help his daughter's education, he was advised to discuss his choice with the girl's school. A junior salesman in Curry's had also been very helpful.

Mr Backhurst said: "The problem seems to be that the industry has grown so fast that training has not been able to keep up."

Now Mr Backhurst is asking for comments from the CTA's 40

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BBC Micro speaks: first review

Programs for: ZX81, Spectrum, Atari

Best seller charts for: Spectrum, VIC, ZX81, Dragon

Software reviews for: Spectrum, VIC, Dragon, BBC, ZX81

ARCADIA SCHIZOIDS
WACKY CATCHA
WAITERS SNATCHA
MOLAR MAUL
AH DIDDUMS FRANTIC

For details please ring 051-236 6849

It's not so easy, says TV's computer man

Home computers are not as easy to use as the makers claim, says the presenter of the BBC television micro series Ian McNaught-Davis.

In fact, he said: "Micros are bloody hard to use.

"The QWERTY keyboard isn't user-friendly for a start. Look at how long it takes to learn

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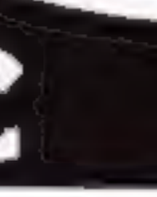
Ian McNaught-Davis

Best for software — every week

ORIC SOFTWARE from TANSOFT

ORIC CHESS



A superb chess game written in Basic with a Machine Code Move Search Routine. Features high resolution colour graphics, record of moves, allows Castling and En-Passant, 5 levels of play and computer can play black or white.

ONLY £9.99 inc VAT

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A 36K adventure game that will test your intelligence and patience for hours. Find the 12 hidden signs of the Zodiac to discover incredible treasures. Can you ward off the angry Yeti? What is the meaning of the radio that plays the 'Archers' over and over again (through your loudspeaker!)?

Only £9.99 inc VAT

48K only

ORIC FLIGHT

Can you fly your new 787 jet on to the runway without crashing, stalling or running out of fuel? Full digital instrument readout plus cockpit view of final runway approach. Superb graphics and sound.

Only £4.50 inc VAT

48K only

Please send me	Quantity	Total
Oric-Chess at £9.99		
Zodiac at £9.99		
Oric-Flight at £4.50		
TOTAL		

Postage per cassette is 40p

Name

Address

Please send me latest price list ____

Please allow 28 days for delivery

HCW10

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TANSOFT LTD
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CAMBS
CB7 4NW

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To advertise your latest products!
Ring Coleen or Barry on
01-437 1002 NOW!

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Nigel Backhurst — touring stores

member companies — which includes software houses and retailers — and from shoppers.

He was very concerned about the complaints and said: "It's not causing much damage at the moment but it could eventually do major harm to the computer trade.

"The high street chains are going to have to make a deliberate effort to make sure there are well trained specialist staff on hand."

He would like the association to offer sales training along with a training pack for sales staff.

A spokesman for W.H. Smith said: "What you have just told me is particularly disturbing.

"We have specialist courses at our training centre in Milton Hill, Oxfordshire. And staff don't go just once, but everytime there is a new advance.

"They are like language laboratories — everyone has a computer and there is an expert with them.

"They have to go on the courses before they are let loose on the public. We take these things very seriously.

"The nice thing is that the courses are over subscribed. Girls working in different parts of the stores have asked to go on the courses. One woman in her 40s in now one of our computer experts. Our staff love working on computers."

So far this year 200 people had taken courses and another 200 would take them in the next two-three months. And staff

Continued on column 4

FREE CATALOGUE
of the best for Spectrum/ZX81. Quote this advertisement and call 24 hours.
01-789 8546
SOFTWARE SUPERMARKET

Continued from column 1

working in Smith's computer "shops within shops" had a compulsory fortnight of training.

The spokeswaman said: "I can put my hand on my heart and say we offer the best training, to my knowledge."

A boots spokesman said his company's training courses were run by an outside firm. And for highly technical questions, each store had a list of telephone numbers to call for Commodore, Sinclair, Dragon and other companies where an expert was immediately available.

He said: " If anyone has cause for dissatisfaction or complaint then we would wish them to got to the branch or write to us at Nottingham.

• The John Menzies chain of stores has just joined the Computer Trade Association

Computer Trade Association, 108 Margaret Street, Coalville, Leics LE6 2LX

• • •

VIC-20 package deal saves £110

New VIC-20 package offer, saving £110, announced by Commodore as part of big promotion.

Designed for first-time buyers, limited edition boxed sets, at £139.99 from June 1, contain VIC-20, cassette deck BASIC tutorial and four games. Usual price, if sold separately: £249.99.

Deal prices VIC-20 at £88, although dealers not allowed to split package. Spokesman said promotion, planned for several months, includes £¼m advert campaign.

• • •

Don't forget!

Closing date for the Audiogenic competition in last week's Home Computing Weekly is first post on May 20.

THE COBRA QUANTUM JUMP!

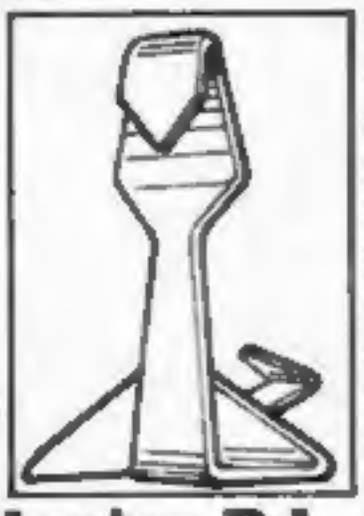
ONLY £26.85
INCLUSIVE VAT

Why pay more when you can use your Sinclair* to tie into a mainframe and/or networks with the COBRA RS 232 COMMUNICATION INTERFACE.

SOFTWARE AVAILABLE AT £4.50

COMPLETE KIT INCLUDING MANUAL £30.00

*Suitable for use with Sinclair ZX81 or Spectrum (Specify when ordering)



COBRA Technology Limited

COBRA Technology Ltd., 378 Caledonian Rd., Islington, LondonN11DR

Manufacturers of Quality Micro Technology Peripherals

HCW10

Continued from front page

to type. And as far as programming in BASIC is concerned, when has that been user friendly?

"There is no transportability of programs, except for the most trivial.

"The producer of the series once said to me: 'Mac, do you ever wake up at night and think of people who find a computer in their store-room and say to themselves: What did I do with that?'"

People had to be aware of the hype surrounding computers — "my micro is better than the next one."

He compared the advertisements with those for language courses and said: "Everyone knows it's extremely hard — except for a very few people — to learn a language and it takes a hell of a long time.

"I would compare that with computer programming. But that doesn't mean that you shouldn't try a few words of French or Italian and enjoy your holiday more.

"I suspect that many people buy computers and don't do much with them. They try learning to program and are overwhelmed or just play a few games. Gradually the thrill wears off and they end up on a shelf.

"I suspect that happens to a large proportion of computers."

Mr McNaught-Davis was speaking after addressing the London branch of the British Computer Society.

Commenting on the term "easy to use" he said: "You should translate this as very hard to use, but easier to use than the extremely hard to use micro that preceded to so-called friendly one you were looking at."

He compared most micro manuals with the Bible: "If you started at Genesis and read to the end it's bloody hard to work out the code unless someone explains it to you."

One problem, he said afterwards, which led to disappointments was: "Most of the salesmen can only sell the hardware and not the software.

"To some extent it's like buying a car. You don't say to the salesman: 'Where should I go in this?' 'He would say: 'It's nothing to do with me, cock. Buy a map, go and visit your auntie.' It's the chicken and egg again."

But didn't the TV series make computing seem easy?

Mr McNaught-Davis said: "Only in the sense that every TV series is misleading — people are not always well-dressed, well-spoken and clean shaven.

"Everybody makes mistakes. Getting it wrong is normal. It is normal to have road accidents and there's nothing you can do to stop them, except make sure people wear seat belts and make the cars as safe as possible.

"It's important to understand what computers can do and how they do it. The best way is to buy a micro and find out."

Mr McNaught-Davis said he was looking forward to the live BBC-1 computer programme he is to present on October 2: "The whole object is that if anything goes wrong you will see it going wrong."

Mr McNaught-Davis is managing director of Comshare, a large computer services company specialising in financial software for big companies.

He stressed that in businesses — from the one-man firm to the largest corporation — computers were becoming "absolutely essential."

However, he said only 10 per cent of his company's programs actually solved problems. The remaining 90 per cent was used to interface with the outside world.

Turning out turtle

Summit Software says its newly-launched version of the LOGO language for the 32K BBC micro, costing £8.50, includes turtle geometry, procedures with parameters, recursion, structured statements and paralell programming.

Summit Software, 96 Toftwood Road, Sheffield S10 1SL

Race by post

Microsonic, a new mail order software house, has produced its first program — Grand Prix for the TI-99/4A at £3.95.

Microsonic, 85 Malmesbury Road, Cheadle Hulme, Cheadle, Cheshire SK8 7QL

Let us know

If you are in the microcomputer business — software or hardware — let us have your news and products for review. Contact Paul Liptrot, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Phone: 01-437 1002.

What's new from across the Atlantic

Three items of interest for owners of the Tandy Colour Computer, Atari 400 and 800, VIC-20, and Commodore 64. The first is called The Color Accountant, a complete financial package including 10 menu driven features: chequebook maintenance, chart of accounts, cheque search, income/expense statement, net worth statement, colour graph design, home budget analysis, colour payments calendar, mailing list, and decision maker. It comes with a 60-page booklet, and costs $74.95.

The second item is called The Magnetic Magazine. Each issue is said to contain four to seven programs, fully usable and listable. Each issue also contains programming hints and techniques as well as a line-by-line examination of the feature program.

With the eighth issue, a series will start on machine language programming, a database, and so forth. This is only available for 16K Tandy and Atari machines, although a sampler is available for the VIC-20. A year's subscription of 10 issues costs $50.00 for cassette, $75.00 for disc. Half-year for $30 and $45 respectively. A sample issue is available for $10 on cassette and $15 for disc.

The last item is The Learning Center. These are programs designed to introduce three- to nine-year-olds to the ease of computer learning through the use of shapes, colours, numbers, and letters. Each program is designed to promote a single skill with rewards being given by the display of a happy face accompanied by music.

These programs will run on all the above machines as well as the Sinclair ZX81 and TI-99/4A. The Learning Center costs $34.95.

A range of educational programs is also available for pre-schoolers and children in the lower grades.

The above packages are available from Programmer's Institute, c/o Future House Dept. D, P.O. Box 3470, Chapel Hill, North Carolina 27514, (6919) 9670861. a catalogue is $2, plus postage (about $4).

★ ★ ★ ★

Interested in locating good hardware and software houses on this side of the Atlantic? If so, send the following folks a letter for more information, and a catalogue: ITM Software Division, attn: Stevan Cloudtree, 936 Dewing Ave, Suite E, Lafayette CA 94549-4292, (415) 284-7540.

THe company has been running major ads offering all software at one-third off list price. It offers more than 2,000 programs from stock, as well as giving information on what they feel is the best program for your needs. Any program that is not for entertainment is sold on a 30-day risk-free trial basis. They do not have a minimum order, either. Sounds lika a very legitimate company for most software needs.

If you are looking for an excellent source of hardware, try Computer Discount of America, 15 Marshall Hill Road, West Milford Mall, West Milford New Jersey 07480-2198. Although it has very good prices on hardware, they also carry a fair bit of software at reasonable prices. Drop them a line for their catalog.

Another excellent hardware house is Priority 1 Electronics, 9161 Deering Avenue, Chatsworth CA 91311.

More from Stateside next week.....

Bud Izen
Fairfield, California

Trouble over Sinclair ads

Sinclair Research has run into trouble with advertising watchdogs for claiming that the 48K Spectrum is more powerful than the BBC micro.

The Advertising Standards Authority upheld a three-point complaint about a specialist press advertisement from a Co Durham reader.

It featured same-scale pictures of the BBC model A micro and the Spectrum, saying the Spectrum "uses just 14 chips to provide more power and more user-available RAM."

The authority considered the comparison unfair since the small size of the Spectrum had been attained at the expense of many facilities and expansion possibilities available on the BBC computer.

An independent consultant was brought in by the authority to help judge the claim that the Spectrum had more power.

And the ASA decided that, although maximum RAM on the Spectrum was 48K and on the BBC it was 32K, the range and sophistication of commands and speed should be taken into account and the BBC micro scored here.

On the final point, the advertisers pointed out to the ASA that in high-resolution mode the Spectrum had 9K of RAM available to the user and that in the same mode the BBC machine had 3K which was useable.

But the authority said the BBC micro worked with equal ease in four modes and that in mode seven, users had 11.75K of RAM available.

The ASA concluded that the comparisons conferred an unfair advantage on the Spectrum and noted that there was no plan to repeat the claims.

Two more complaints about advertisements for Sinclair products have been upheld:

● Three people said that, although a leaflet promised delivery within 28 days, they had difficulty getting software. The ASA asked for an assurance that "stringent" efforts would be made to stop this happening again.

● Microdrive storage devices were advertised as "available later this year, for around £50," but two readers said although these advertisements appeared throughout 1982 they had not been able to get them. The advertisers said the claim was made when production was expected in October/November. When the launch was postponed, and magazines notified, it was impossible to amend the remaining advertisements. The ASA also got an agreement that future advertisements would make it clear that a £30 interface unit was required.

Four other companies are also rapped in the authority's latest report:

● The ZX81 was offered at a "special price" of £49.99 in a national paper advertisement for H. Wigfall & Son, of Sheffield, yet a Bolton reader said the computer was usually priced at below £50.

● A Rank Xerox advertisement offered a free Space Raiders cassette with the ZX81, but when a reader called at the Liverpool branch he found the tape needed a 16K RAM pack to run and that, in any case, the game was not in stock. The second complaint was not upheld after the ASA heard that the advertisers thought they had ample stocks, based on their annual forecast. Demand had been far greater than expected.

● The authority's consultant was brought in to help adjudicate on a two-part complaint about an advertisement for the ZX Autocoder by Control Technology, of Hyde, Cheshire, but no longer marketed. In his view it failed to give enough information for anyone to ascertain the nature of the Autocoder. The reader said it provided only mnemonics and not machine code and that it accepted not Sinclair's BASIC and Tiny BASIC. The advertisers said they thought the complainant had considered the program to a compiler — quite different from the product advertised.

● Four people complained about advertisements which described BASIC as "essentially...plain English." The advertisers accepted BASIC commands were not the same as English commands, but said that the adverts pointed out that BASIC was a "simple" computer language and that standard commands were based on English. The ASA considered the description unfounded.

Advertising Standards Authority, Brook House, Torrington Place, London WC1E 7HN

Bob Hamilton (with beard) and Paul Dyer — Quest partners

Running into a Black Hole

You can tell when Bob Hamilton, a bearded 27 year old, is dreaming up ideas for new computer games.

It's when he is running across the Welsh mountains or on a hill near his Cheltenham home.

Bob and Paul Dyer, 23, set up Quest Micro Software in February and have just broughout their first cassette, a £5.50 game for the Spectrum called The Black Hole.

Paul said: "Bob gets all his inspiration from his running."

And Bob, who wrote The black Hole in eight weeks, said: "It's good inspiration to run through the mountains.

"You forget about everything and it enables you to concentrate; it clears the mind.

In Bob's last job he was writing in assembler for defence systems. Paul was a hardware man for the same company.

The idea of forming Quest came after Bob bought a 48K Spectrum as a Christmas gift for his two brothers, Ian, 16, and 14-year-old Darren.

Bob said: "I bought some software and I wasn't very impressed so I started writing some myself. We decided to go into it oursevles. And we've got a very enthusiastic bank manager."

Quest Micro Software, 119 The Promenade, Cheltenham

SPECTRUM/ORIC SOUND BOOSTER

Telesound 84 outputs the computer sound direct through your unmodified TV set. Sound effects then can be controlled from a whisper to a roar. Three easy snap-on connections eliminate soldering.
Telesound 84 measures 2½x2x1½ cm and requires no separate power supply. This unique device (patent pending) uses some of the very latest ultra miniature components and costs only **£9.95** inclusive of post, packing, etc.
Full instructions with connection diagrams are supplied so that the unit can be fitted in minutes without any previous experience.

Cheques/PO to
COMPUSOUND
32 Langley Close
Redditch, Worcs. B98 0ET
Please state your computer when ordering.

Kenneth's micro voice

Owners of the BBC micro will soon be able to give their computer the voice of newscaster Kenneth Kendall.

He will be heard speaking a vocabulary of 165 items, including the letters and numbers of the keyboard as well as keyboard-related words such as stop, start, correct and incorrect.

Acorn Computers, makers of the BBC micro, are aiming the package at blind and dyslexic computer users, as well as at young children using computers.

According to Acorn's David Bell, whose young son is mildly dyslexic, there is a small but growing market for such applictions. He said: "We envisage all sorts of slightly unusual applications developing for the chips".

The package, consisting of a standard speech synthesiser chip and a PHROM (Phrase Read-Only Memory) containing digitised samples of Kenneth Kendall's voice, will cost £55 and will be fitted only by Acorn dealers.

Kenneth Kendall

At the same time as fitting the two speech chips, dealers will — if necesary — add the 1.2 operating system required for the speech system, as well as two sockets to the left of the BBC's keyboard to allow program cartridges to be plugged in. The whole operation should take less than an hour, said Mr Bell.

The digitised sounds stored in the PHROM are converted into audible form by the speech processor chip. Speech will use an extra sound channel added to the BBC's existing four channels, and known as channel – 1.

It will be accessed via the SOUND command in the normal way.

Additions to the speech system will be available on cartridge. Mr Bell said: "It's just a question of when. I suspect it won't be until early next year."

By the fourth quarter of this year, though, a range of games and educational programs on cartridge wil be avilable from Acornsoft.

● First review — see page 20

Acorn Computers, Fulbourne Road, Cherry Hinton, Cambridge

Fresh from America

A big American software wholesaler has opened a warehouse near Heathrow Airport with the promise of 1,800 titles from 150 companies for sale to UK dealers.

And shoppers will benefit from the company's guarantee on all products, said New Yorker Herb Blumstein, managing director of Softsel Computer Products.

Among the titles he had in stock were 50 for the Commodore 64, more than 100 for the VIC-20 and 400 — on cassette, cartridge and disc — for the Atari 400 and 800.

He said: "We are bringing in lines which have not been seen here in any quantity. Now they will be available easily."

Mr Blumstein said he was now looking for titles for computers like the Spectrum and the Dragon to distribute to dealers.

Softsel Computer Products, Central Way, North Feltham Trading Estate, Middlexex TW14 0XQ

Put it on paper

A company called Beebprint is offering a mail-order print-out service to BBC micro users. An average listing, from a 1,200 baud cassette, costs £1.95.

Beebprint, 19 Orchard Way, Hurstpierpoint, West Sussex BN6 9UB

K-tel moves into software

K-tel, best known for heavily-advertised record albums, is planning to market computer software.

Financial director Steve Deasey has contacted dozens of software houses. He said: "There has been a fantastic response — I think there's a crying need for an efficient distribution service.

"It's a job that needs doing and we are ideally suited to it.

"At present software distribution is disorganized and fairly inefficient.

"We are prepared to offer a complete or partial deal — we will tailor our service. We will, if required, do everything starting with the master tape and including duplicating, distribution and TV advertising, if it's appropriate."

K-tel, an American company which set up in London 12 years ago, started by marketing small household goods and moved into albums eight years ago.

The company licenses recordings, packages them, advertises them heavily on television and markets them store by store, saying it can restock within 24 to 48 hours. It supplies chains like Boots, W.H. Smith and Woolworths.

Would K-tel market software under its own name, too?

Mr Deasey said: "Probably not at this stage — but in the foreseeable future. And it would not be on a single product basis, like records. We are not going to hire programmers. If a programmer comes to us ... well, that's completely open."

As a world-wide company, Mr Deasy said, K-tel could simplify software exporting. He said: "I've been in touch with our Australian company and the market there is a pirate's paradise."

K-tel, 62 Western Avenue, London W3 0TU

You could be on our pages

We welcome programs articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 48 characters (use a new ribbon) and/or sent on cassette. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possbibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

Competitive — rates are paid.

Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Liptrot, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE

You'll find a complete spectrum of software at W.H. Smith.

Flight Simulation
Sinclair
48K £7.95

Penetrator
Melbourne House
48K £6.95

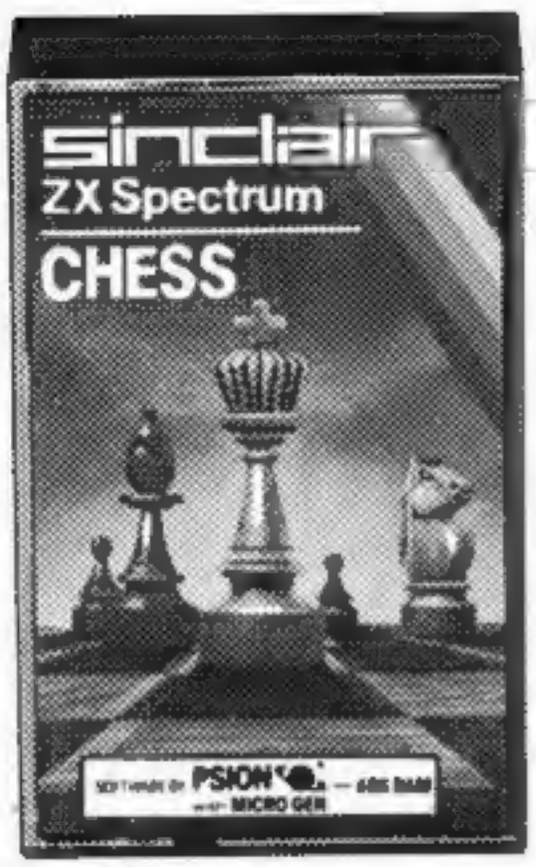
The range of software available for the Sinclair Spectrum is to say the least, extensive.

So every month at W. H. Smith, we review the range with particular reference to presentation, challenge, excitement and value for money. And because we're quite severe it's a difficult job finally to arrive at a Top Ten. But as you can see, not impossible.

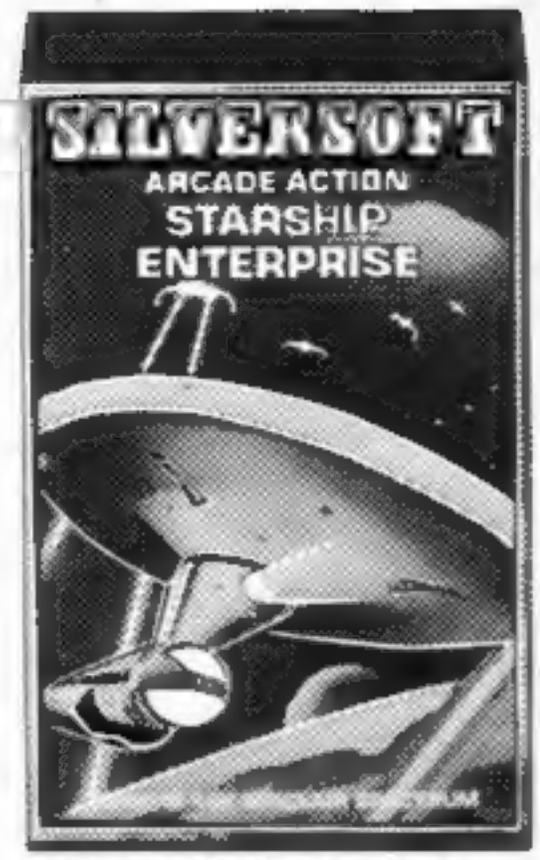
You don't have to take our word for it.

At W. H. Smith we stock the widest selection of Spectrum Software, so you can judge for yourself.

Title	Producer	K RAM	Price
Arcade Games			
Meteor Storm	Quicksilva	16	£4.95
Space Intruders	Quicksilva	16	£4.95
Time Gate	Quicksilva	48	£6.95
Gulpman	Campbell	16	£4.95
Spectral Invaders	Bug-Byte	16	£5.00
Meteoroids	Softek	16	£4.95
Planetoids	Sinclair	16	£4.95
Hungry Horace	Sinclair	16	£5.95
Space Raiders	Sinclair	16	£4.95
Mazeman	Abersoft	16	£4.95
Nightflight	Hewson	48	£5.95
Ground Force Zero	Titan	16	£5.00
Caterpillar	CDS	16	£5.95
Leapfrog	CDS	16	£5.95
Gobble-A-Ghost	CDS	16	£5.95
Centi-Bug	DK Tronics	16	£4.95
Cruising	Sunshine	16	£4.95
Blind Alley	Sunshine	16	£4.95
Derby Day	Computer Rentals	48	£5.95
Jackpot	Computer Rentals	48	£4.95
Escape	New Generation	16	£4.95
Gobbleman	Artic	16	£4.95
Galaxians	Artic	16	£4.95
Invasion Force	Artic	16	£4.95
Sentinal	Abacus	16	£4.95
Cyber Rats	Silversoft	16	£5.95



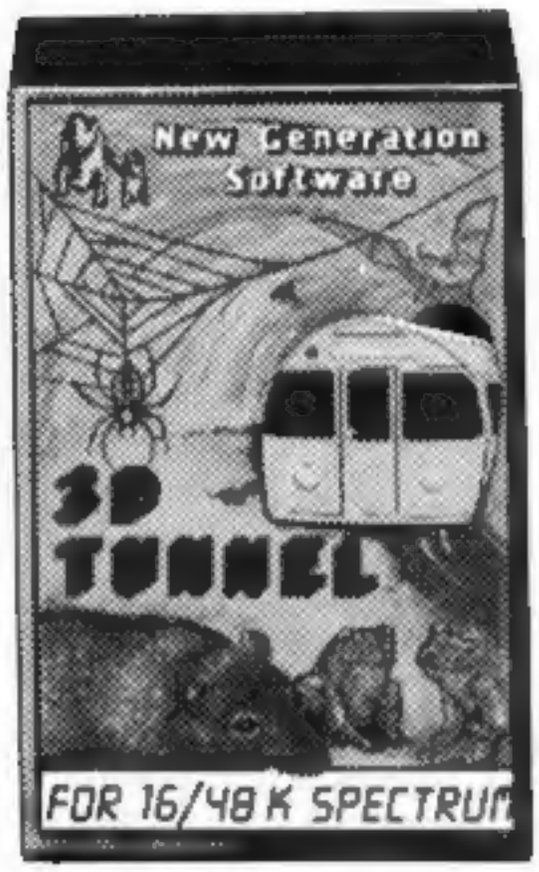
Chess
Sinclair
48K £7.95



Starship Enterprise
Silversoft
48K £5.95

Horace Goes Skiing
Sinclair
16K £5.95

Avenger
Abacus
16K £4.95



3D Tunnel
New Generation
16K £5.95

Mined-Out
Quicksilva
48K £4.95

3D Tanx
DK Tronics
16K £4.95

Arcadia
Imagine
16K £5.50

Title	Producer	K RAM	Price
Ground Attack	Silversoft	16	£5.95
Orbiter	Silversoft	16	£5.95
Slippery Sid	Silversoft	16	£5.95
Strategy Games			
Battle of Britain	Microgame	48	£5.95
Novotnik Puzzle	Phipps	16	£4.95
Chess	Artic	48	£9.45
Voice Chess	Artic	48	£9.95
Superchess II	C P Software	48	£7.95
Football Manager	Addictive	48	£6.95
Chess-The Turk	Oxford	48	£8.95
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Over The Spectrum 2	Melbourne House	16	£5.95
Over The Spectrum 3	Melbourne House	16	£5.95

WHSMITH

Prices correct at time of going to press. Subject to availability. At selected branches only.

HCW10

Spectrum joins Micronet 800

Spectrum owners can join Micronet 800 from July 1. And the two-month delay will have been worthwhile, said managing director Richard Hease.

Instead of plugging the phone handset into the rubber cups of an acoustic coupler, there will be a more reliable modem with a cable leading to the phone's wall socket.

Reached through Prestel, Micronet plans to offer Spectrum users 100 free programs — from games to utilities bulletin boards, buyers' guides, prize games, news, user group information and electronic mail.

Commercial software can be bought off the screen at about one-third off. And all of Prestel's pages can be called up.

The first 10,000 subsribers pay £54, or £49 if they use BBC micros. But since there are soon likely to be 17,500 BBC Micronet users and a Spectrum waiting list, the reduced price offer will be available to about 6,000 more subscribers.

After that the initial cost will be £89.50.

This buys the modem, with the Telesoftware in ROM, lead, instructions, and directory and registration by Prestel which will supply a password.

The quarterly £13 fee for home use — £8 to Micronet and £5 to Prestel — is added to the phone bill. But there is no computer charge between 6pm and 8am on weekdays and all day at weekends. Outside these hours the charge is 5p a minute.

Mr Hease said the modem, with its Texas Instruments ROM chip, would fit neatly under the Spectrum, being the same width and depth. It was an inch high at the back and sloped forward.

The plug fitted into the Spectrum's user port and then cables connected to the TV, power supply and phone socket. British Telecom will fit new-style sockets in homes with older wiring.

Micronet had planned to bring out the hard-wired modem later but, said Mr Hease: "We thought we would move straight to the chip, which is a lot more reliable.

"It's better than the BBC acoustic coupler in my opinion. You can download the screen on-

Richard Hease

to the ZX Printer and by having the telesoftware in ROM you are not interfering with the memory. So when you download you don't wipe any memory."

Micronet's editorial manager David Babsky said an earlier version of the operating software gave background colours and flashing which the company was not happy with. Now they were satisfied with the screen quality.

The Spectrum modem also gives the screen 40 columns with full Prestel graphics instead of the computer's usual 32 columns. And pages for transmission using the mailbox feature can be written with Micronet disconnected.

Mr Hease said the price of the modem meant business people could have fully-fledged Prestel terminals on their desks for less than £190, with the 16K Spectrum at £99.95, which would become even more useful after September when the Telex facility was due to start.

The modems would go on sale in retailers from August 1 and a first order was for a batch of 5,000.

Micronet was set up by a publishing group, British Telecom's Prestel staff and high street distributors Prism Microproducts and has signed a seven-year extendable deal with Prestel.

As well as the BBC micro, the other computers which can now use Micronet are the Commodore 3000, 4000 and 8000 series, TRS-80 models I and III and the Research Machines 380Z, which is used mainly in schools, with Apple due at the end of this month.

Scicon, the BP subsidiary which wrote the Spectrum telesoftware, is now working on a similar project to allow the Dragon to use Micronet.

Micronet 800, 8 Herbal Hill, London EC1R 5JB

Why do women write off the micro?

On first seeing a column entitled One Man's View, I immediately wondered: why assume that a column about computing is written by a man? No doubt this makes me sound like a rabid feminist — I'm not. It does seem to be a fact that on average, women don't like computers.

Why this should be is a mystery to me. The things are, after all, useful; they play an increasingly important role in our lives; and above all (as any kid with a pile of software cassettes will tell you) they are fun.

I bought a ZX81 from W. H. Smith's shortly after they began to sell them. While chatting to the (male) assistant, I found that I was one of the very few women who had shown as interest in the machine. Practically all the other buyers had been men, and certainly the demonstration machine in the shop was always surrounded by a jostling group of small boys.

Later on I took my son to one of the ZX Microfairs in London. Again, it was obvious that the bulk of the crowd was made up of young boys accompanied by their fathers. Hardly a girl in sight. I think I read somewhere that someone did a rough survey of the figures and found that there were around six hundred boys to each girl. Why?

Most schools now have micros for pupils to use, and presumably both boys and girls have equal access to them. But how many of the programs submitted to computing magazines are written by girls? Even my son seems to take it for granted that girls aren't interested in computers.

Why should this be? Are most women inherently incapable of understanding or enjoying an interest in computers? I find this hard to believe. So does society condition women to think that the subject is either beyond their capabilities, or should not be one of their interests? Alas, it seems that this may be so. Here are some of the replies I got from my female friends when I questioned them on this topic:

"The maths teaching I received was inadequate, so I don't understand the language involved. I feel threatened by something I don't understand". Apart from the fact that no great maths skills are needed to understand or use a computer, I'm sure many people use artifacts such as TV, cars, telephones etc without fully understanding how they work: does this make them feel threatened too?

"I don't like sophisticated gadgets: they seem unnatural. We should try to keep things simple." This seems to imply that women are basically more "natural" than men. But does a subtle or sophisticated mind — which can belong to either sex — mean that its owner lacks humanity?

"I don't like computers because I don't like things that can do something I can't." So does a nutcracker, if you think that's important.

All of which leaves me still with a singular lack of understanding about why, on the subject of computers, there should be such a difference between the sexes. I don't believe that women are inherently less capable than men in intellectual pursuits, so is it a matter of conditioning? Fashion? Or the kind of publicity given to computing? Why don't men say they dislike computers for the same reasons?

Catherine Clunies-Ross, Eastbourne, East Sussex

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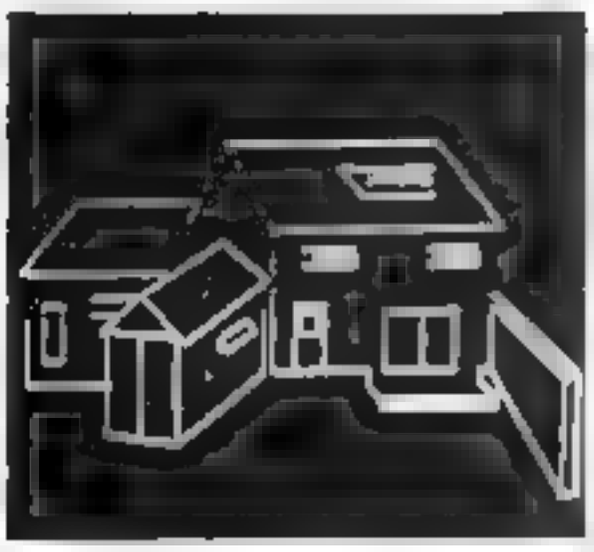

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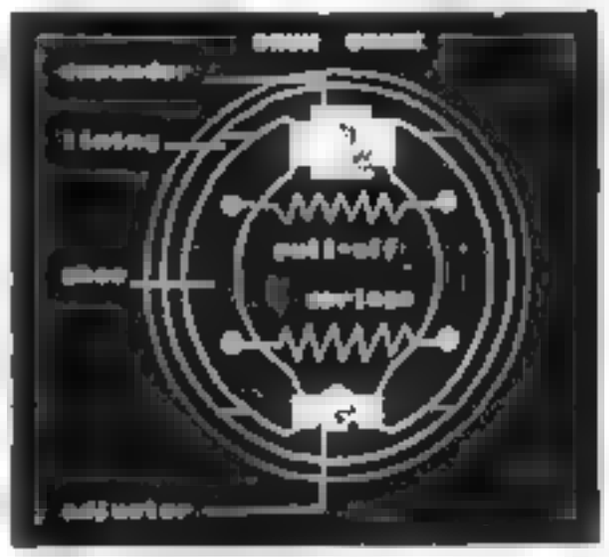
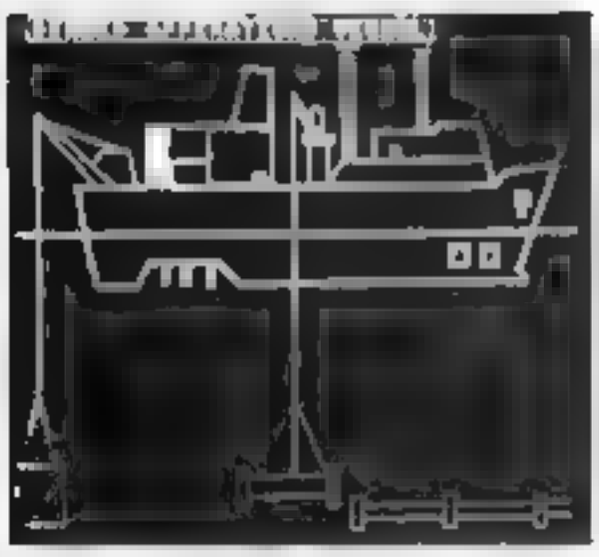
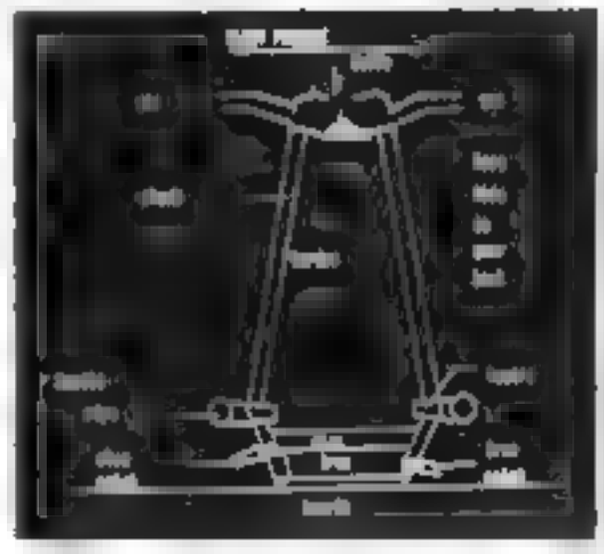
(the examples shown are all unretouched off screen photographs of some of the programs capabilities)







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HCW 10

Virgin: We don't poach

Some programmers have deserted their software companies to sign with newly-launched Virgin Games, soon to release its first eight titles

Nick Alexander, boss of the new company, said: "I was very surprised when they approached us because we don't poach — we don't see the need to. It's not necessary or desireable

"We hav enot gone out to drag people away

"We are not offering massive royalty rates. People have come to us because they feel we will offer a better job and will sell more

"The software houses do not seem to bear us any ill will, which I'm very pleased about. I'm not getting threatening phone calls."

Mr Alexander, 27, said only a few of his freelance programmers had been with other companies; most were new talent

Mr Alexander was recruited from Thorn EMI Video Programmes to set up the new company three months ago and given a £1m budget by millionaire Richard Branson, head of the Virgin empire

It was started as a discount record store 10 years ago and now the group includes 30 stores — several of which are franchises — recording studios, book publishing and video cassettes.

Virgin Games' first eight titles have a provisional release date of June 14, followed by more in September and October

Mr. Alexander said: "I'd expect we would have 30 by the end of the year. But as time goes by the shelf life of games will shorten so it won't be a cumulative catalogue."

Sales are being headed by Lawrence Kaye, who has just left Virgin Records where he dealt with retail sales in the West End of London. Will the same marketing techniques be used for software?

Mr Alexander said: "It would be a mistake to treat them exactly as records, but there's a lot to be learned from that sort of marketing."

The eight June releases are for the Spectrum, BBC micro model B and the VIC-20. The Spectrum four are an arcade game, a sports simulator, a space adventure with graphics, and what Mr Alexander describes as "a new sort of game which might appeal to people who are fed up with 'zap-em' games."

There will be one arcade game for the VIC-20 and three games for the BBC micro: an arcade game, a space adventure with graphics and an action adventure.

Virgin Games, 61/63 Portobello Road, London W11 3DD

Spectrum of sound

You don't need to be a musician to compose music, says David Gordon, of Bellflower Software which has launched Music Maker, a £5.75 tape for the 48K Spectrum

It uses the computer's BEEP command to make sounds and shows it in usual music notation

The program will play and print melodies in 11 different keys, each with a choice of 12 time signatures and 10 speeds.

Tunes typed in from sheet music or composed straight onto the screen can, said Mr Gordon, be SAVEd on cassette and LOADed replayed at any speed

Bellflower Software, 6 Rosewood Avenue, Greenford, Middx

Micros netted

Six Oric-1s, two Colour Genies and an Apple, total value £2,600 with software, have been stolen from Harran Computers, of Bury St Edmunds.

Top Ten programs for the Dragon-32

1	Donkey King	Microdeal
2	Katerpillar Attack	Microdeal
3	Planet Invasion	Microdeal
4	Space War	Microdeal
5	Dragon Trek	Salamander
6	Alcatraz	Microdeal
7	Quest	Dragon
8	Wizard War	Salamander
9	Chess	Dragon
10	Madness & Minotaur	Dragon

Compiled by Boots

Top Ten programs for the VIC-20

1	Arcadia	Imagine
2	Panic	Bug Byte
3	Amok	Audiogenic
4	Cosmiads	Bug Byte
5	Wacky Waiters	Imagine
6	Asteroids	Bug Byte
7	Blitz	Commodore
8	Choplifter	Audiogenic
9	Alien Blitz	Audiogenic
10	Race	Commodore

Compiled by Boots

Top Twenty programs for the Spectrum

1	Flight Simulation	Psion (2)
2	Hobbit	Melbourne House (1)
3	Penetrator	Melbourne House (3)
4	VU-3D	Psion (4)
5	Horace Goes Skiing	Psion/M. House (5)
6	VU-File	Psion (6)
7	Hungry Horace	Psion/M. House (8)
8	Planet of Death	Artic (7)
9	Transylvanian Tower	Richard Shepherd (11)
10	Chess	Psion (12)
11	Schizoids	Imagine (13)
12	Arcadia	Imagine (10)
13	Nightflight	Hewson (9)
14	Planetoids	Psion (14)
15	3D Tanx	dK'Tronics (15)
16	Ground Attack	Silversoft (16)
17	[illegible]	Artic (18)
18	VU-Calc	Psion (17)
19	[illegible]	New Generation (20)
20	Football Manager	Addictive (19)

Compiled by W. H. Smith. Figures in brackets are last week's positions

Top Ten programs for the ZX81

1	Flight Simulation	Psion
2	Monster Maze	New Generation
3	Galaxians	Artic
4	Chess	Psion
5	Catacombs	J K Greye
6	QS Scramble	Quicksilva
7	Space Raiders	Psion
8	Gulp	Campbell
9	Mazogs	Bug Byte
10	Avenger	Abacus

Compiled by W H Smith

Tapes for toddlers

A big magazine company is to bring out software tapes for toddlers.

Dr Linda Deer, who has been appointed to head the project, said the accent would be on enjoyment for children of three to six "It should be a fun experience or the child would not get anything out of it.

"Our software will be for those people who think there's more to life than Space Invaders."

Dr Deer, an American in her thirties, was the editor of 30-Hour BASIC by the National Extension College before she joined the National Magazine Company, publishers of magazines which include Good Housekeeping, Cosmopolitan, Company and She.

She expects the first six in the series to be out in the autumn, probably for the Spectrum and BBC micros, both of which are bought by schools with cash aid from the Government.

The aims will be to complement school work and prepare pre-school children for school.

She expected that would also give parents more confidence with computers

Dr Deer said two teams were working on the project — one a group of programmers and the other formed of teachers.

National Magazine Company, National Magazine House, 72 Broadwick Street, London W1V 2BP

TI joysticks

Owners of the TI-99/4A computer can now use joysticks by Atari — and a range of other makers — with a £12 adaptor, says supplier Graham Micro Accessories. An adaptor for two joysticks costs £16.

Grahame Micro Accessories, 3rd floor, 11-13 Long Street, London E2 8HJ

Spectrums 'to double'

Sinclair managing director Nigel Searle believes 600,000 Spectrums will be sold world-wide in the next 12 months — double the sales in its first year.

He was speaking after his company cut the prices of both Spectrums to £99.95 for the 16K model and £129.95 for the 48K version and brought the price of the ZX Printer down from £59.95 to £39 95.

Sinclair Research, Stanhope Road, Camberley, Surrey

NewBrain prices cut

Prices of the NewBrain micro have been slashed by £25 to keep up demand until the CP/M operating system — used mainly for business software — goes on sale.

And maker Grundy Business Systems is also including a free income tax guide on tape, worth £18 40, as well as its beginners guide and £7 95 demonstration tape.

Until the end of the month the NewBrain A costs £244 and the AD model, which has a liquid crystal display, is £274.

Sales boss Keith Beverton explained the reason for the price-cutting: "We geared up our production because of the demand for CP/M — but it's not available yet.

"We have mistimed it slightly. It's six weeks out of phase, but to get within six weeks is not bad."

Most of the CP/M operating system will be on ROM in a floppy disc controller due in June/July at £120. The remaining 20 per cent will be loaded from disc, costing £29 with the manual and licence.

At the same time Grundy will be offering a 5¼in floppy disc drive at £195 and made by TEAC. It will give double density storage of 200K on one side of the disc.

The power supply, to run computer, drive and controller will cost £50.

Soon afterwards a double-sided double density drive with 800K of storage will be available, costing £355 and also made by TEAC.

NewBrains have 32K of RAM — or 29K if using high resolution — and Grundy is launching a plug-in module giving an extra 64K, pageable under CP/M, plus adding a parallel printer port to the serial port already installed.

It will cost £200 and, said Mr Beverton, will mean that with CP/M the entire range of Peachtree software would run on NewBrains.

He described the NewBrain as "the thinking man's micro" and said Grundy was bringing out a series of fairly intellectual games.

He believed users were serious hobbyists and business or professional people who used the NewBrain at home to gain experience of BASIC and graphics and it then went to the office to become the heart of a business system. And this would be heightened now CP/M was to be available soon

Grundy ws expecting to have 47,000 users within the next 12 months.

Grundy Business Systems, Elmtree Road, off Standley Road, Teddington, Middlesex TW11 8TD

16K Orics . . . at last

Long-awaited 16K Oric-1s should now be ready for despatch to customers who ordered them by post, said Oric Products. And the company has also brought out the first five of a series of specially commissioned programs.

Mail order customers who ordered the 16K model were sent the 48K version on loan because of problems with the cheaper version

Now they are being told they can either keep the 48K model for £127.50, a discount of 25 per cent, or return it for replacement with the 16K version.

Oric Products is no longer selling its computers by post, although Tangerine still runs mail order. Oric sales director Peter Harding said after the remaining mail order commitment had been met most available 16K Orics would be shipped overseas to meet the "enormous demand "

This meant 16K models would not be in the shops until July. Prices were still being discussed.

The five software titles, all for the 48K Oric, are Oric Multigames, five games on one cassette, Oric Flight, simulating an aircraft landing, and Zodiac, an adventure game, all at £7.95, and Oric Chess and Oric Bases, a data management program, both at £9 99

All five are available from dealers, said Oric.

And the promised FORTH language tape will be available "shortly" at £17.95, including manual.

Oric Products International, Coworth Park, London Road, Ascot, Berks SL5 7SE

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62-64 Kensington High Street, London W8
(Tel: 01-937 6258)

Fore! But Mr Spectrum just can't play the game

It's no fun being a caddie when Mr Spectrum plays golf. You'll find out why when you type in Ranjan Bhattacharya's game

What a pity — Kim Mills, 21, will not be joining you on the golf course

You have been employed as a caddie to Mr Spectrum. The trouble is that Mr Spectrum is a terrible player, but he just won't give up trying.

His shots are usually so bad that the ball nearly always ends up on the opposite side of a busy road.

And, as caddie, you have got the job of crossing the road to retrieve the stray golf ball and return it to him.

You are given 500 points for picking up the golf ball and a further 1,000 points for returning it to Mr Spectrum.

He is, however, rather mean. He has warned you that if you manage to get run over he will not be bothered to take you to hospital more than five times.

How it works

Most of the game is in subroutines which are called when needed. These are the main blocks of the program:

10-70 initialise variables, check for key input and update score accordingly
80-85 set up bottom half of screen
90 checks for collision between caddie and car
100-499 scrolls cars left and right checks whether ball has been picked up or returned
550 sound for collision with car
7000-7090 prints top half of screen
8000-8990 initialise strings to hold traffic
9000-9095 set up all the user defined graphics
9500-9797 general messages and prompts displayed at various stages in the game
9900-9920 introduction
9950-9999 instructions

Hints on conversion

To convert Caddie to run on most other computers all that is really needed is to alter lines 110 and 120 using LEFT$ and RIGHT$ so that A$ and B$ are moved one place to the left or right.

All lines using INKEY$, particularly lines 60 and 70, should be modified using the GET$ command

The colour commands BORDER, INK and PAPER and the commands INVERSE, FLASH and BRIGHT can be omitted or replaced by equivalent commands depending on your machine.

BEEP should also be omitted or replaced with a similar sound command. SCREEN$ should be replaced by a small sub-routine which will do the same job.

You move around the screen by pressing

5 to move left
8 to move right
6 to move down
7 to move up

The difficult to read inverse words in the last part of the program are "CADDIE", "PRESS C TO CONTINUE" AND "PRESS S TO START "

Variables

VT vertical co-ordinate of caddie
HZ horizontal co-ordinate of caddie
BALL checks whether golf ball has been picked up and also prevents cheating
SCORE score
HISCORE highest score
C$ array used to check whether caddie collided with car
LIVES lives left
A$/B$ strings to store cars.
Some other minor variables are also used.

Line 110 moves whatever is stored in B$ one place to the right and line 120 moves whatever is in A$ one place to the left. I have used this technique both for the cars and again in lines 9900-9920 to move the word CADDIE left and right across the screen at the beginning of the game.

SPECTRUM PROGRAM

```
  10 LET SCORE=0  LET LIVES=5
  20 GO SUB 9900: GO SUB 9000
  25 LET HISCORE=0
  30 GO SUB 8000
  40 LET VT=20: LET HZ=16  GO SU
B 7000
  45 LET BALL=0
  46 IF BALL=1 THEN LET VT=2
  50 PRINT AT VT,HZ; PAPER 8;" "
  60 LET VT=VT+(INKEY$="6" AND V
T<21)-(INKEY$="7" AND VT>=1)
  65 IF VT=0 THEN LET VT=1
  66 IF HZ=0 THEN LET HZ=1
  67 IF VT=22 THEN LET VT=21
  70 LET HZ=HZ+(INKEY$="8" AND H
Z<31)-(INKEY$="5")
  72 IF HZ=32 THEN LET HZ=31
  75 BEEP .009,-4: BEEP .009,4
  78 PRINT AT 0,27;"  ";AT 0,
     27;SCORE
  80 BRIGHT 1: PRINT AT 4,0;
     INK
     6;A$;AT 11,0; INK 3;A$;AT
     9,0;    INK 5;A$;AT 10,0;
     INK 4;B$;AT 5, 0; INK 7;B
     $;AT 12,0; INK 6;B$;AT 16,
     0; INK 3;A$;AT 17,0;    INK
     4;B $
  81 PRINT AT 20,30; INK 5;"/"
     ;AT 21,30;"/"
  82 IF BALL=0 THEN PRINT AT 1,1
     5; INK 7;"o"
  85 PRINT AT 14,0; PAPER 4;"
                            ";A
T 19,0; PAPER 1;"
                            "
  90 IF SCREEN$ (VT,HZ)<>"" THEN
GO TO 1000
 100 PRINT AT VT,HZ; PAPER 8;"*"
 110 LET B$=B$(32)+B$(1 TO 31)
 120 LET A$=A$(2 TO )+A$(1)
 130 IF BALL=0 AND VT=1 AND HZ=1
5 THEN GO SUB 9500
 135 IF BALL=1 AND VT=20 AND HZ=
29 THEN GO TO 9700
 136 IF BALL=1 AND VT=21 AND HZ=
29 THEN GO TO 9700
 150 GO TO 50
 499 STOP
 500 IF INKEY$="S" THEN RETURN
 502 IF INKEY$="s" THEN RETURN
 505 GO TO 500
 550 LET X=0.015: BEEP X,4: BEEP
  X,6: BEEP X,8: BEEP X,10  BEEP
X,12: BEEP X,14  BEEP X,16  BEEP
  X,4: BEEP X,6: BEEP X,8: RETURN

1000 PRINT AT VT,HZ; FLASH 1;"*"
1010 DIM C$(1,704)
1020 PRINT AT 0,0; FLASH 8; OVER
  1; PAPER 8; INK 2;C$(1): GO SUB
  550
1025 IF LIVES>0 THEN LET LIVES=L
IVES-1: GO TO 40
1026 IF SCORE>HISCORE THEN LET H
ISCORE=SCORE
1027 LET SCORE=0
1030 INPUT "PRESS ENTER TO PLAY
AGAIN "; LINE B$
1035 LET LIVES=5
1040 GO TO 30
2010 GO TO 40
7000 CLS
7010 PRINT AT 0,8;"HIGH ";HISCOR
E,TAB 20;"SCORE      ";AT 2,0; P
APER 1;"
                            "
7020 PRINT INK 6;A$;B$
7030 PRINT ' PAPER 4;"
                            "
7050 PRINT INK 6;B$;A$
7060 PRINT ' PAPER 1;"
                            "
7070 PRINT AT VT,HZ; PAPER 8;"*"
7080 FOR A=1 TO LIVES: PRINT AT
0,A; INK 5;"*";: NEXT A
7090 RETURN
8000 BORDER 0: PAPER 0: INK 9: C
LS
8030 LET A$="🚗  🚗 🚗     🚗  🚗
🚗 🚗"
8040 LET B$="🚗    🚗      🚗
 🚗 🚗 🚗"
8990 RETURN
```

SPECTRUM PROGRAM

```
9000 FOR A=USR "A" TO USR "H"+7
9010 READ USER  POKE A,USER
9020 NEXT A  RETURN
9030 DATA 0,1,2,127,235,253,28,
9040 DATA 0,240,16,252,215,187,5
6,16
9050 DATA 0,15,8,63,235,221,28,8
9060 DATA 0,128,64,254,215,191,2
8,8
9070 DATA 28,28,8,8,62,8,28,34
9080 DATA 3,3,1,3,7,15,15,31
9090 DATA 0,8,28,62,28,8,0,0
9095 DATA 19,19,35,35,67,67,67,2
07
```

```
9500 PRINT AT 7,5; INK 1; PAPER
6; FLASH 1;"PICKED UP GOLF BALL"
;AT 14,10;"NOW RETURN"
9501 LET OT=2: LET BALL=1: PRINT
 AT 1,15;" "
9505 GO SUB 9800
9507 LET SCORE=SCORE+500
9600 PRINT AT 7,0; PAPER 4;"
                            ";AT
 14,0,"
          ": RETURN
9700 PRINT AT 2,3; INK 1; PAPER
4; FLASH 1,"THANKS FOR GETTING T
HE BALL",AT 7,8,"I AM SORRY BUT"
;AT 14,0,"ANOTHER ONE'S GONE OVE
R THE ROAD",AT 19,5,"PLEASE GET
IT FOR ME"
9705 GO SUB 9800
9706 FOR A=0 TO 100: NEXT A
9707 LET SCORE=SCORE+1000
9710 GO TO 30
9800 BEEP .2,7. BEEP .2,4. BEEP
.2,0  BEEP .5,0  BEEP .2,4  BEEP
 .2,7  BEEP .2,4  BEEP .2,5  BEE
P .2,2. BEEP .2,-1. BEEP .5,-1.
BEEP .2,2: BEEP .2,5: BEEP .2,2
 BEEP .2,4: BEEP .2,2: BEEP .2,0
. BEEP .2,0
9805 RETURN
9900 BORDER 0  PAPER 0: INK 7: C
LS : LET X$="E     CADDIE      CAD
DIE     CADDI"
9901 LET Y$="E     CADDIE      CAD
DIE     CADDI"
```

```
9902 FOR D=0 TO 50: PRINT AT 0,0
;X$;AT 1,0;Y$
9904 LET X$=X$(32)+X$( TO 31)
9905 LET Y$=Y$(2 TO )+Y$(1)
9906 NEXT D
9908 GO SUB 9800
9910 BORDER 0: PAPER 0: CLS : PR
INT AT 6,10, PAPER 2; INK 6; FLA
SH 1;"CADDIE"
9912 PRINT AT 8,5; INK 5;"© R.BH
ATTACHARYA 1983"
9914 PRINT AT 10,1,"DO YOU WANT
INSTRUCTIONS (Y/N)"
9916 IF INKEY$="Y" THEN GO TO 99
50
9917 IF INKEY$="y" THEN GO TO 99
50
9918 IF INKEY$="n" THEN RETURN
9919 IF INKEY$="N" THEN RETURN
9920 GO TO 9916
9950 PRINT AT 0,10, INK 6; PAPER
 2; FLASH 1;"CADDIE"
9952 PRINT AT 2,7; INK 6;"INSTRU
CTIONS"
9954 PRINT AT 4,0, INK 6;" I am
a golfer and you are a    small
boy working for me as a    caddie
. I don't like to admit    it but
 my golf skills arn't all that f
antastic. What I am        trying
 to say is that I keep     hittin
g the ball over the road. Since
you are my [redacted] you can go and
 get the ball for me. I    will b
e waiting on the side of   the ro
ad for you to return to    me my
golfball(s)."
9956 PRINT AT 16,0; INK 5," Oh!
by the way, try not to get run o
ver. I am not going to be  bothe
red to take you to the     hospi
tal more than 5 times."
9970 PRINT AT 21,0,"[redacted]"
9980 IF INKEY$="c" THEN GO TO 99
97
9990 IF INKEY$="C" THEN GO TO 99
97
9995 GO TO 9980
9997 CLS : PRINT AT 0,0;"CONTROL
 KEYS.-"
9998 PRINT AT 1,14,"5 TO MOVE LE
FT";AT 2,14;"8 TO MOVE RIGHT";AT
 3,14,"6 TO MOVE DOWN";AT 4,14;"
7 TO MOVE UP",AT 20,0;"[redacted]
[redacted]"
9999 GO SUB 500: RETURN
```

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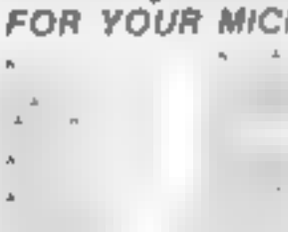

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Here is the BBC micro news . . . with a digitised Kenneth Kendall

In another first for Home Computing Weekly, reviewer John Waterhouse fitted and tested the new speech chips in his BBC micro. This is what he thinks of the result

Speech was a goal of the computer scientist long before "micro" became a household word.

Acorn's latest expansion for the BBC micro has in no uncertain way achieved that goal and brings science fact one fairly substantial step closer to science fiction for the BBC micro user.

To make the micro speak, a minor operation is required to install the necessary vocal cords. This can be carried out at an authorised Acorn dealer for £55.

Included in the price is the addition of the cartridge ROM facility. Although the most important part of the upgrade only entails plugging two integrated circuits into sockets on the main printed board, the BBC user will not be able to carry out this upgrade himself as slight modification of the PCB is required on earlier versions

The other part of the expansion entails fitting two sockets and modification of the keyboard PCB. The large hole in the case to the left of the keyboard will be opened up and a proper cover fitted to gain access to the new sockets below.

This will allow cartridge ROMs containing programs or extra vocabulary for the speech synthesis unit to be plugged in when they become available

The speech synthesis and cartridge ROM upgrade will only function correctly with operating system 1.2 and this, if not already fitted, will be provided at no extra cost by the dealer.

Having only heard the tinny American computer voices before, I was impressed by the clarity of the BBC Micro's new voice with a digitised Kenneth Kendal lending it a most acceptable English accent.

The secret behind the clarity and tone of this new voice lies in the two chips fitted during the upgrade.

The first is a Texas TMS 5220 Speech Processor, almost a microprocessor in its own right, and the 16K PHROM (PHrase Read Only Memory) containing all the data for the speech processor to work on

The PHROM, the first of 16 that will eventually be available, stores enough information to reconstitute 165 words or word-parts. These words have been created from original recordings made by Kenneth Kendal, the BBC newsreader.

There are three ways to access the speech synthesis unit but the easiest is from BASIC using an extension of the SOUND command, for example, SOUND-1,179,0,0 speaks "computer".

The −1 identifies which PHROM is to be read, the 179 selects the word or word-part from within the PHROM and the two trailing zeroes maintain the syntax of the SOUND command.

It is also possible to use ASCII codes within the SOUND command.

SOUND-1,ASC E,0,0
speaks E (ee)
SOUND-1,ASC e,0,0
speaks -ED (ed)

A great deal of thought has gone into the content of the first PHROM (PHROM A) and I particularly like the logic behind the attributing of certain words to ASCII codes, for example says "small", says "large",a full stop says "point", and there are many others.

All the ASCII codes from 32 to 126 speak associated words or sounds and this may be clearly demonstrated by my very simple program 1.

This speaks as each key on the keyboard is pressed.

Although there are only 165 separate words or word-parts in the PHROM, with a little ingenuity a far greater range may be created.

The voice synthesis unit may be equally as well controlled from within assembly language programs by use of the OSWORD and OSBYTE calls.

OSWORD with A=&07 gives the equivalent of the BASIC SOUND command. The OSBYTE calls on the other hand allow the advanced machine code programmer to read and write directly to the speech processor

Both of these methods rely on information stored in the PHROM but the system allows the user to create his own words and sounds in RAM and then put the speech processor to work on these.

This, though, may not be a particularly practical idea, as to store even a short word such as "zero" requires 144 data items to be stored in RAM

Cartridge software will no doubt soon become available but this will only be of use if the speech synthesis upgrade has been fitted as the speech processor will be needed to translate data in PHROM into code useable by the computer.

Finally, to demonstrate just how easy it is to use the new expansion, my program 2is the first piece of published software for the BBC Micro to speak for itself! It is a short PROCedure that may be added to most games programs to speak the score. ■

Listing 1

```
10 G=GET
20 SOUND-1,0,0,0
30 GOTO10
```

Listing 2

```
 10 REM  Speak your score procedure
 20
 30 REM         J. Waterhouse
 40
 50 REM             May 1983
 60
 70
9000 DEF PROCscore(SX)
9010 MX=SX DIV 1000
9020 CX=(SX MOD 1000) DIV 100
9030 TX=((SX MOD 1000) MOD 100) DIV 10
9040 UX=((SX MOD 1000) MOD 100) MOD 10
9050 SOUND-1,290,0,0
9060 SOUND-1,257,0,0
9070 SOUND-1,209,0,0
9080 SOUND-1,128,0,0
9090 IF MX>0 SOUND-1,MX+48,0,0:SOUND-1,141,0,0
9100 IF CX>0 SOUND-1,CX+48,0,0:SOUND-1,140,0,0
9110 IF (TX>0 OR UX>0) AND (MX>0 OR CX>0)SOUND-1,
164,0,0
9120 IF TX>1 SOUND-1,TX*2+140,0,0:SOUND-1,137,0,0
9130 IF TX>0 AND TX<2 AND UX>2 SOUND-1,UX*2+140,0
,0:SOUND-1,135,0,0
9140 IF TX>0 AND TX<2 AND UX=2 SOUND-1,273,0,0
9150 IF TX>0 AND TX<2 AND UX=1 SOUND-1,190,0,0
9160 IF TX>0 AND TX<2 AND UX=0 SOUND-1,264,0,0
9170 IF UX>0 AND (TX=0 OR TX>1) SOUND-1,UX+48,0,0
9180 IF SX=0 SOUND-1,48,0,0
9190 ENDPROC
```

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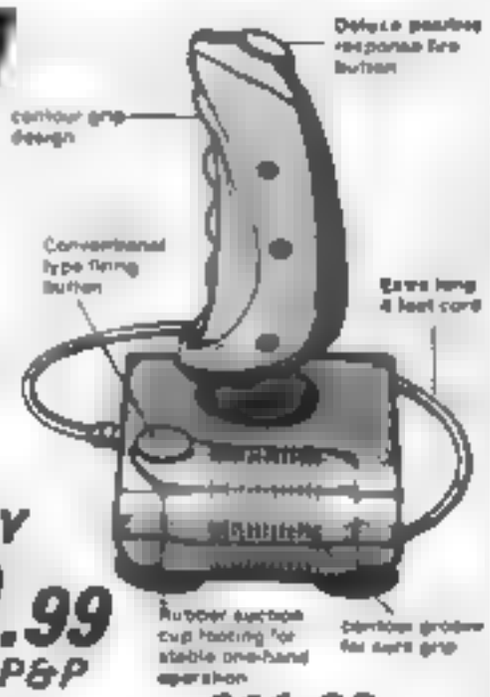

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2 MULL CLOSE, OAKLEY, BASINGSTOKE, HANTS HCW10

Let's get serious

Our panel takes a look at three programs designed to let your micro do a useful job. Find out whether they're invaluable or dispensable

Listfile
Spectrum 16

G&J Bobker, 29 Chadderton Drive, Unsworth, Bury, Lancs

Listfile is a utility data filing program offering storage of about 50 records with 16K RAM, or 600 with 48K. Its most attractive feature is a machine code search routine which can locate records very quickly. But beyond that, there is little to recommend the program.

Despite misleading load instructions, the program loaded everytime with LOAD "". Also misleading is the terminology used; records are called 'blocks' and fields, 'lines'.

The program is inflexible, each block has a fixed number of eight lines. There is no way of labelling lines, nor are they numbered, so it's easy to enter data in the wrong order.

There is an extra line called 'infoline' which will appear on the screen, but not on the printer when a hard copy is requested.

Each line has a maximum of 26 characters. Enter more, and the line is rejected, and the screen display disrupted!

Blocks can be added or deleted, but not edited. So if you make a mistake on entry, or wish to modify later, the block has to be deleted and re-entered. While the search option is fast, it only operates on certain lines

The 16K and 48K versions differ slightly. Both are provided on the same cassette. Files from one version cannot readily be transferred to the other.

The machine code 'search' adds a little sparkle to an otherwise mediocre filing program

D.N.

instructions	40%
ease of use	70%
display	n/a
value for money	30%

★-★

Dungeons Of Intrigue
48K ORIC-1
£5.50

A.S.L. Software, 66 Fford Llywelyn, Little Acton, Wrexham, Clwyd

Dungeons Of Intrigue is, as the name suggests, yet another reworking of the Dungeons and Dragons concept. As such you would expect a game that both entertains and offers some original ideas. Unfortunately this game does neither

You start off by choosing and equipping your character in the usual manner. The scenario is similarly predictable: you must find a long-lost Magical Rod which is somewhere in a monster-ridden dungeon

The display consists of a 5X5 block showing you and your immediate surroundings. All commands are abbreviated to a single letter, which certainly speeds up the game, but the twelve options offered are not enough to make things interesting.

On the presentation side the game is very sloppy. Much of the text is badly spaced, and some messages vanish or scroll off the screen before you can read them

All in all, this game appears to have been very hastily written, with almost no attention to detail.

G.P.

instructions	40%
playability	45%
graphics	15%
value for money	20%

★

Grafdisk, Grafkey, Grafstik BBC
B cassette
£7.95
disc £12.95

Clares, 222 Townfield Road, Winsford, Cheshire CW7 4AX

These programs are described as a cheap entry into computer aided design. This is quite a task and how well did they fare?

First, an outline of the series. Grafkey is a keyboard-driven graphic generator program. It allows you to draw lines, rectangles, triangles and circles on screen. These can be lined or filled in up to eight colours plus eight flashing colours.

The resultant pictures can be saved to tape quite quickly, in about 20 seconds.

One nice facility is the Rubber Banding mode, in which up to four points can be stretched about the screen.

Grafstick is similar in function to Grafkey, but is driven by a joystick

Grafdisk combines both programs, and has the advantage of faster save and load facilities — about two seconds faster!

The instructions supplied were quite detailed and easy to follow. The programs all failed however to exploit the full capability of the BBC graphic commands, though with the disc program, Clares promise an upgradable on-going development.

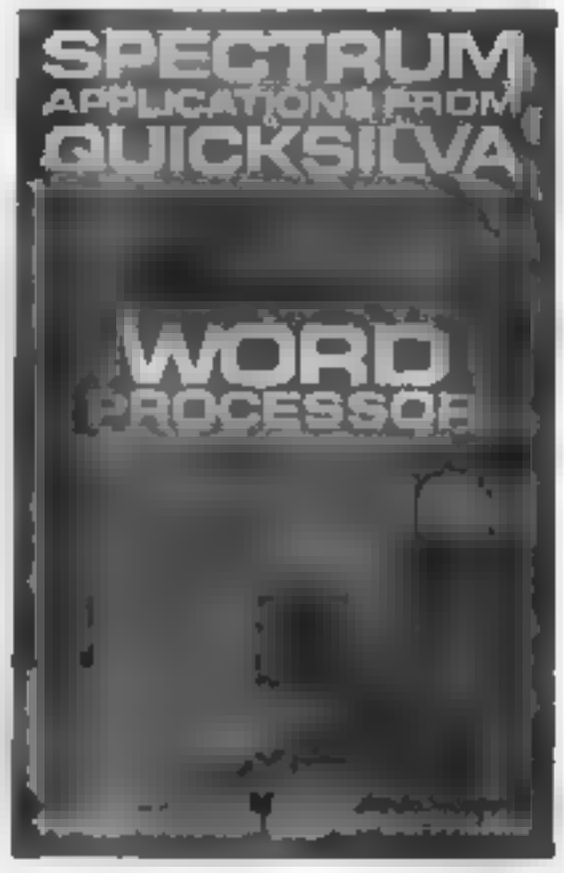
My main criticism is that you can't dump a screen to a printer; this sort of program is of little use without that ability

Secondly, hitting the Break key by accident was always fatal, as "olding" resulting in "bad program" and a loss of hours of work!

J.H.

instructions	75%
ease of use	60%
display	75%
value for money (cassette)	40%
value for money (disc)	85%

★-★-★



Word Processor
48K Spectrum
£5.95

Quicksilva, 13 Palmerston Road, Southampton SO1 1LL

There is a very healthy industry devoted to supplying word processors for the world of commerce, and many home computer owners could make use of word-processing facilities too. Writing job applications, repeated letters of complaint to computer companies, perfecting that software review — the possibilities are endless.

But to use this type of program, you do of course need a printer, and the Sinclair printer is not, to say the least, ideal. I'll leave it as an exercise in economics for you to work out whether or not this program is for you.

That said, it does work It is menu-driven, and at every option the prompt asks you to make sure that you really want to do what you are requesting, so it would be very difficult to make a mistake and erase hours of work by accident

But there are so many different things to remember that I would have appreciated a leaflet or small booklet to refer to, rather than constantly going back to the instructions.

B.B.

instructions	85%
ease of use	60%
display	n/a
value for money	65%

★-★

LETTERS

Send your letters to Letters, Home Computing Weekly, 145 Charing Cross Road, London WC2 0EE. Don't forget to name your computer — the best letter could win £5-worth of software. Queries cannot be answered on this page

Games are getting better

I feel that some defence of the games software industry is necessary after Alo Rabaiotti's claim that games software is kil ng he micro market

Firs ly Mr Rabaiotti has made the mistake of umping the games player seeking e tertainment and he true enthusiast into the sa ne categ ry

To many people, the pur chase of a computer as an enter tainment s val le evision and rep ace arcade games s an end in itself They do not buy games machines such as the Atari VCS because, compared to many com puters, th s machine has limited capab ties poor qua ity American software wh ch is rel t ve y expensive — compare the prices f Imagine's Orbiter or Artic's Galaxians to the Atari equivalents

It m st be rem ved that perhaps 75 per cent of micro sales are people who have neither the desire nor the abilit to program

Games software has grown up to supply a need, and it is pro spering as the need rises High software sales mean that micro sales must also be h g t Demand for games machines s surely sus taining an infant industry and supply ng money for research and development.

Mr Raba otti s remarks about programs written in BASIC or Forth not being up to arcade standards are perfectly true On the other hand, pro grams not written in machine code are now the exception rather than the rule and standards are improving almost weekly

Fina ly, comparing the second-hand m cro market to that of the second-hand car is a farce With leaps in hardware technology tak ng place all the time providing new products at lower prices, who would buy, say, a second-hand Acorn Atom when they could get a new Oric-1 instead?

I foresee a continuing pro sperous market for both the micro and games software

David Anderson, Saltcoats, Ayrshire

★ *This letter wins £5 of software*

New is not always better

Home Computing Weekly is one of the few magazines to cater for TI-994/A computer, which I believe to be a much underrated machine. This may be due to the fact that there are not as many of them as of other popular machines. But the quality and reliability is second to none

It does seem today that it is accepted new is better, even though for good money waits of four months or more are tolerated, faulty machines that have already been modified arriving complete with built-in bugs.

Besides a TI-994/A I have a TI59 with printer. Because of the reasons above, I believe that they are exceptional value for money. The only complaint that I have is the high cost of software and accessories

R.A. Chapman, Milford Haven, Dyfed

Seeing orange on your Dragon

In issue 7 of HCW, the reviewer of Eduguz for the Dragon asks. "How did they get it to print black text on orange?"

This can be achieved very simply by using the SCREEN command. SCREEN 0,1 gives black text on an orange background

However, every time a PRINT or INPUT statement is used, the Dragon reverts to black text on a green background, so SCREEN 0,1 is only of use at the end of a screenful of text.

The following program shows how to get black text on an orange background by using SCREEN 0,1:

```
10 REM * USE OF SCREEN
   COMMAND *
20 REM * WITH THE TEXT
   SCREEN *
30 CLS
40 PRINT @ 32*8+6,
   "BLACK TEXT ON
   GREEN"
50 FOR T = 1 to 2000: NEXT
   T
60 CLS
70 PRINT @ 32 * 8 + 6,
   "BLACK TEXT ON
   ORANGE"
80 SCREEN 0,1
90 FOR T = 1 TO 2000: NEXT
   T
100 GOTO 30
```

J. Austin, Manchester

Don't knock the Oric

I think it is about time someone spoke up for the poor old Oric-1. I have been very pleased with mine. On January 20 I sent off my order and shortly afterwards I received a letter telling me that it was due to be delivered during the second week of February. It arrived on February 17, and I have had absolutely no problem with it

Your letters pages are always crammed with letters complaining about the Oric. I'm sure I can't be the only one who has been satisfied. So come on, give it a rest. And a message to all those waiting for an Oric — it's worth waiting for!

Liz Goddard, Sevenoaks, Kent

IVC owner fights back . . .

After reading N. P. Batram's letter comparing the VIC-20 and the TI-99/4A in your 19-25 April issue, I felt that I must protest strongly

Mr Batram says that a 16K RAM pack for the VIC costs £70. Audio-Computers sells a 16K RAM pack for £34.95, and this can be extended to 32K for a further £11 95.

Mr Batram states that Texas cartridges are of a "better quality" than VIC cartridges. This is simply not true. Both cartridges are of similar quality.

The VIC has a lot more software support than the TI-99/4A, has 16 colours of which any nine can be on the screen at once, and has four sound channels, three for making music and one for special effects.

The VIC has a user-defined graphics capability which can change all or any of its four character sets.

In addition, the VIC has high-resolution graphics, a proper keyboard, and a whole range of expansion sockets.

In short, I think the VIC is very good value for money at around £130 — only £5 more than the ZX Spectrum. So Mr Batram, I think that you've got your facts wrong. The VIC is overall a much better computer.

David Williams, Porthinorwic, Gwynedd

. . . And what about the Atari?

In reply to N. P. Batram's letter claiming that the TI-99/4A was the best home computer for under £200, this letter is to say that I think this claim is unfounded. I agree that the TI—99/4A is better than the VIC-20, but to say that it is better than an Atari 400 is an insult to all Atari owners.

The TI-99/4A's highest resolution is 192 by 256. The Atari's is 191 by 319. The TI has a weird sound system with three simultaneous tones plus a noise generator. The Atari has four sound channels that can be used together or separately.

The TI is, in my opinion, not very attractively made, with a cartridge slot in an unattractive place. The Atari is attractively made with a well-concealed cartridge slot, and the keyboard will not wear out as push-button keyboards do.

I feel it is up to Atari and other computer owners to voice their views.

P. Wadsworth, Northfleet, Kent ■

Soft Joe's Software

Sniper – for the Dragon 32

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Fast action machine code game, which calls for a steady trigger, and nerves of steel. 10 levels of difficulty, joystick controlled gunsight, high res graphics and sound. "Smart" targets!!
Game design and dragonware: R. Lowry

Cosmic Defender – for the BBC model B

"I thought I could do it ... now I'm not so sure, 'Hang on to 'em at all costs' were the orders from star command, it could cost me more than I bargained for! Even with the best star fighter in the galaxy!! I've got to hang on ... keep going ... must fight ... but for how long?..."

Defend the federation Plasmaton fuel dumps from the mindless suicide pilots of the alien battlefleet. Use your cosmic starfighters weaponry and hyperspace to destroy the evil enemy ... but watch your fuel, bonus points and fuel cost blood!!! How long can YOU hold out in this fast action game by Anthony Rafferty

Acnean Mutoids – for the BBC model B

"Where am I"?.. A reasonable question, but the shock answer is only the first in a series of catastrophes that might lie ahead ... A bolt of lightning stabs your eyes as the monitor awakes you from stasi-sleep, only to tell you the worst!

Your interstellar cruiser has been invaded by the evil race known as the acneans – even worse, you are alone!!

In a micro-instant you realise the task that faces you is one of spine-tingling terror – you must risk all to save earth from a horrific destiny. Can you avoid the blood dripping, plasma curdling mutoids and activate the ship's self destruct computer – do you have the courage? Can you save mother earth??, can you save yourself??? the answer is surely ... how??? Superlative graphics and sound make this game by Phil Woodrow, the ultimate challenge!

Bandit – for the Dragon 32

Ruthless ... that's the only way to describe it, try your luck against the meanest fruit machine in the universe. 1,000 credits and you break the bank. It's not easy, but then, you wouldn't expect it to be would you???

You can almost feel your pocket getting lighter in this full feature fruit machine game. Based on a real 20 symbol per reel machine, this superb simulation displays excellent high res colour graphics and realistic sound. random hold and nudge facilities, with the meanest, most vicious gamble feature in the west! without doubt, the most compulsive addictive fruit machine on the market. Specifically for people with deep pockets and money to burn.
Game design and dragonware: R. Lowry

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IC W 0

Calling all armchair adventurers

We sent our intrepid team of reviewers out to explore the latest adventure game releases. Here they present their reports and ratings...

Ocean Trader
16K ZX81
£5.95

Quicksilva, 13 Palmerston Road, Southampton, SO1 1LL

This is a very enjoyable game, and if you are not careful you could find yourself becoming quite an addict! You are the captain and owner of a 19th century vessel, trading between five British ports; your aim, of course, is to end up showing a profit, but this is easier said than done

You have the option of dealing in five different types of cargo — general, arms, coal, whiskey and bullion; as you go from port to port you will find the current prices for each of these varying in an unpredictable manner.

To help matters you may borrow money from a finance company in your home port, but beware — the interest mounts up alarmingly! And, of course, there are all sorts of hazards which may beset your seafaring expeditions — pirates, storms and fogs to name three

Maybe you will overcome these; if not, you may lose some or all of your cargo and end up without a penny to your name. And if you take a chance and ship an illegal cargo, watch out for the pitfalls...

All the details you need to have at hand are displayed on screen, for example, your bank balance; how much you owe the finance company; how many units of each cargo you have, etc.

Options are displayed below (Do you want to buy or sell? What type of goods? Which destination do you choose for your next voyage?) and it is quite alarming to find out how easy it is to lose everything. Of course, it *is* possible to make a bundle quickly, with luck, but you will have to play the game to find out how!

The instructions are loaded first from the tape (as they are quite involved, they are not printed on the cassette insert,) and are accompanid by attractive graphics. After you have studied them you can load the main programme.

I had no trouble at all loading and running this game, and found it clear and well-produced. Unlike some games, this one really makes you think before you risk all your worldly goods!

I particularly enjoyed some of the remarks that accompanied the news that I had 'lost' my ship — humour can soften the hardest blow.

All in all, I think this game is well worth buying

C.C.-R.

instructions	70%
playability	85%
graphics	65%
value for money	95%

★★★★★

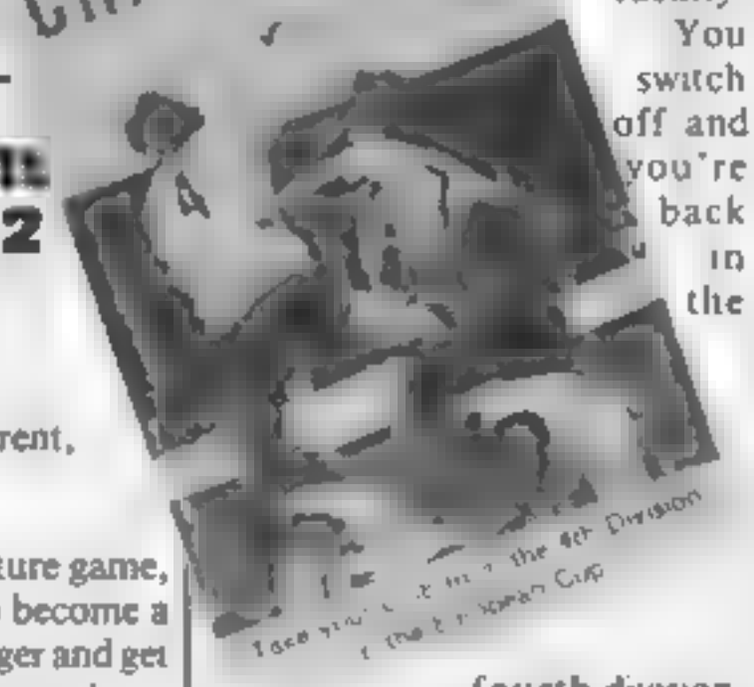
Champion: Dragon 32
£5.95

Peaksoft, 7 Hawthorn Crescent, Burton-on-Trent, Staffs

This is a textual adventure game, and the challenge is to become a top football club manager and get to the top of the division within a season of twenty games.

Promotion is then assured, and, ultimately, if you top the 1st division you are entered in the European Cup. Don't ask — I've only got to the second division!

You start by giving your club its name and, given a pool of money, you're on your own buying and selling players. Players have a skill rating which affects their price and your chance of success. On pressing the P key your match result is displayed followed by the league table and then the news — some good, some bad.



It sounds dull unless you have a burning ambition to be involved with all the routine of management. But this is what it is — a management simulation. At least a couple of hours is needed to play this game and it's a pity that there is no game save facility You switch off and you're back in the fourth division.

I'm sure there's a lot of interest in football management and it certainly entertained a few of my friends. To maintain that interest these games would have to transcend the specialist barrier and initially 'Champions' does. it is fast moving, clear in its display of information and witty too.

I enjoyed the news flashes — "Brian Clough says you're rubbish, morale soars" — which gives some credibility to the character you imagine yourself to be. Unfortunately, for me, the novelty soon wore off and the routine of management made it hard to persist. M.P.

instructions	90%
playability	80%
graphics	0%
value for money	75%

★★★★

Velnors Lair
48K Spectrum

Neptune Computing, 98 Howe Street, Gateshead. Tyne & Wear NE8 3PP

This is a Dungeon & Dragon-type adventure game. Right at the beginning you choose which class you want to be' a wizard, a warrior or a priest, with each character having different powers.

Whichever you choose I can guarantee a lot of midnight oil burning. Like a good book, you don't want to put it down — fortunately there is a save game facility.

The lack of graphics doesn't matter a bit; in fact, I got so engrossed in the game I could visualise the scenes. To give you any description of the action would only spoil it for you, besides, the cassette inlay says it all.

If you are a D & D person, then this game is a must for your collection. I don't go in much for predictions, but I have a feeling that this game will get high in the top ten, and stay there.

No problems with loading, and as I only got about 25% of the game completed I couldn't say whether or not there are bugs (of the program variety, that is) Even if there were, I think I would have ignored them! By the way, that 25% represents a lot of playing. I must dash now, I have a spell to cast! B.B.

instructions	100%
playability	95%
graphics	n/a
value for money	100%

★★★★★

From pottery to programs in two years

Widgit Software started as an evening hobby and turned into a range of bright programs for the under-eights. Candice Goodwin met Tina and Mike Detheridge — and program testers Katy and Simon — of Widgit

Tina and Mike Detheridge kept the computer in the kitchen

The idea of writing programs for younger children grew out of the need to teach Katy and Simon how to use the Apple. Tina said: "You can either say no, don't touch, or teach them how to use it. We decided to teach them how to use it". First they wrote, "very slowly" an alphabet program for Simon.

Tina said: "Now the computer is left on all day, and they come and play with it whenever they want. Sometimes it's just for a few minutes, sometimes for three-quarters of an hour."

It was Mike and Tina's friends who pointed out to them the gap in the market for children's programs. Recalls Tina: "It all started because lots of our friends said that if our programs were available commercially, they'd buy them."

Around the same time, the headmistress of a local school asked Tina if she could come and give some impartial advice, as the school was considering buying a computer. The result was that Tina was invited to take the programs and computers into the school to try them out on a class of five- and six-year-olds.

She now goes in regularly, one morning a week. The kids enjoy "playing computers", and Tina gets ideas for new programs and ideas about any potential trouble-spots in the old ones.

By now, the Detheridges feel they are getting a pretty good idea of what makes an effective program for children. "First of all, they need to be entertaining — good graphics, sound and colour.

"You need to cater for a flexible ability range. Children vary a lot, and they grow up very quickly. It's difficult to tell before you buy a program how well your child is going to cope with it.

"The skills needed to operate the program have to be simple. I saw one program where the skills needed to operate it were far higher than the skills the program was supposed to be teaching. Most of our programs can be operated with just two keypresses.

"The four tapes in the Widgit range, all selling at around £5.25, are Shape Sorter, Counting, Adding and Subtracting and Alphabet. They all make use of bright colours and lively graphics to make learning more like fun than work.

Shape Sorter, for example, the child has to pick out which of a row of houses is the odd one out by moving a car in front of the appropriate house. It gets into the car and drives off to a house.

Widgit Software is a familiar name in the home computer field that it soon will be. Widgit, Tina and Mike Detheridge's company, have just produced their first programs for the Spectrum — a range of educational games for the under-eights.

It's early days and, as Tina and Mike had previously used an Apple for administration at school, started programming first. Tina got the computer bug soon after Katy, now nearly three, was born: "I used to read the manual while I was feeding her, and in the evenings after they were both in bed, I set myself a project — to write a squash program."

Tina used to be an art teacher, and computer graphics are her main interest; she is now responsible for the effective and colourful graphics which make Widgit's programs so attractive to young children.

Mike, on the other hand, is better at organising the overall structure of the programs. Says Tina: "We complement each other quite well. But I think my job is the harder job." "Well, I think yours is," says Mike.

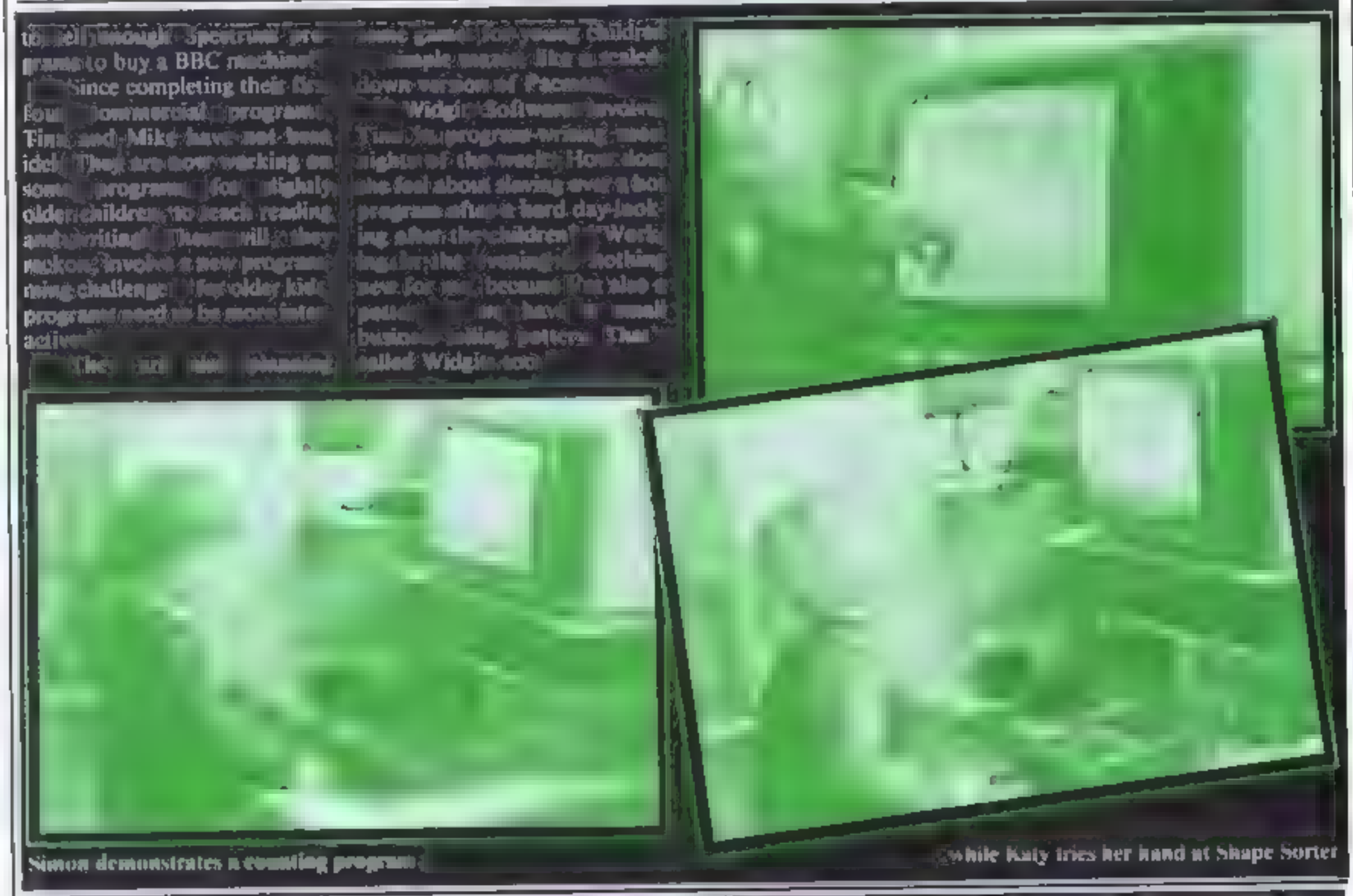
The programs are written mainly in BASIC, with just a few machine code routines to provide smooth action where needed. "We don't need to use a lot of machine code, because we don't want things to whizz about on the screen." Mike said: "We have to keep tabs on a lot of things happening on the screen, and that's harder to do in machine code."

Why did they finally decide to write for the Spectrum? Tina said: "It seemed to be selling an awful lot, and we felt home owners and first time buyers would buy it. That's the sort of market we're aiming at. We don't want our stuff to just be used in schools." All four programs have been converted for the Spectrum since November last year.

The Detheridges reckon that each program currently takes about a month to write, followed by a lot of tidying up.

Tina said: "We have to make them quite crashproof. It's no good having an error message come up if a child's going to use the program. They have to do either nothing or what is required."

For young children though, the Spectrum's keys aren't ideal, and Tina and Mike would like to diversify on to other machines later. "If there's a lot of demand, we'll write the programs for the BBC Micro too. But first we'll have



Simon demonstrates a counting program

While Katy tries her hand at Shape Sorter

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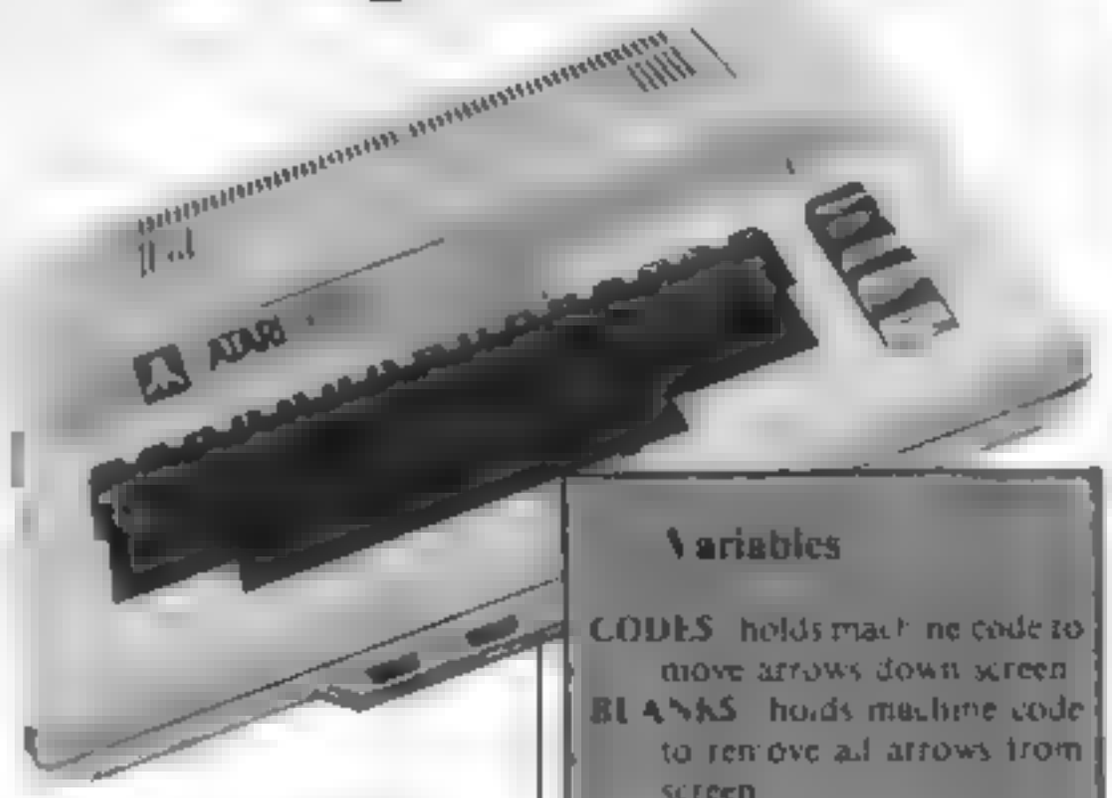
Grab a fortune . . . but will you survive to spend it?

Now's your opportunity to make real money. Marc Freebury's game, for the Atari computers with joystick, demands quick responses



You'll have to avoid a hail of arrows to successfully snatch the bags of cash in my game for the Atari 400 or 800 with one joystick.

The objective is to move your man to the right hand side of the screen to collect the money bag and then take it to the left where it will be credited as points on your total score.

After six bags have been recovered with one man the speed of the game doubles. And after eight runs you are given a full set of cover from the arrows. You get an extra man after scoring 4,000 points.

Due to the slowness of BASIC, I was forced to resort to machine code for two of the operations.

Important: Before typing in Moneyrunners, read the notes below.

Hints on conversion

Most machine code makes the translation of this game difficult. Owners of the Atari Atom... machines in Issue No... of Home Computing Weekly.

... assembler could be used to duplicate the machine code in the Atari game. Anyone who translates this might like to then try improving on the theme, since I believe a lot more could be done to make it more ...

Variables

CODE$ holds machine code to move arrows down screen
BLANK$ holds machine code to remove all arrows from screen
CODE,BLANK holds the addresses of the above strings
MAN$, MAN2$, NOMAN$ current man displayed
MANX$, MAN2X$, NOMANX$, NOMAN2X$ man without money bag
MANX$, MAN2X$, NOMANX$, NOMAN2X$ man with cash bag
SCORE, HISCORE as stated
SCRN top left corner of screen memory
MANX, MANY position to display current man
BAGFLAG set to 1 if a money bag is being carried
MANF set to 1 or -1 depending on which man is to be displayed
SKILL initially 1, set to 2 after six runs by one man. Doubles game speed
TRIES number of runs made by current man

How it works

100-230 machine code initialisation. Since the screen memory for the Atari tends to move around depending on your RAM, to find the start of screen memory we use locations 88 and 89 which hold the appropriate address. Locations 1536-1541 are used as storage for these addresses so that the machine code routines can ...

240-290 machine code data. Be careful when entering.

300-390 initialisation of strings showing man. Man's body and the two dollar signs are ... Full stop means ... space. D means cursor down ... cursor left. ... indicates ...

400-480 from page and rules ... keyword ... inverse.

490-560 screen set-up and initialisation of variables. In line 520 everything between the quotation marks except the figures ...

... and bonus calculation. It is essential that ... spaces in line 660 are inverse. Dollar sign in line 740 is also inverse.

780-860 "man dead" routine. The word "aarrgh" in line 790 is inverse and sounds like dollar signs.

870-910 end of game routine. "Game over" in line 880, ... inverse.

```
100 REM **********************
110 REM *                    *
120 REM *  MONEY  RUNNERS    *
130 REM * BY MARC FREEBURY   *
140 REM *                    *
150 REM **********************
160 RESTORE 240:A=1:DIM CODE$(200),BLANK$(50)
170 READ Z:IF Z<>-1 THEN CODE$(A)=CHR$(Z):A=A+1:GOTO 170
180 A=1
190 READ Z:IF Z<>-1 THEN BLANK$(A)=CHR$(Z):A=A+1:GOTO 190
200 CODE=ADR(CODE$):BLANK=ADR(BLANK$):HISCORE=0
210 A=PEEK(88)+PEEK(89)*256+40:B=A-INT(A/256)*256:POKE 1537,
B:POKE 1538,INT(A/256)
220 A=A+880:B=A-INT(A/256)*256:POKE 1539,B:POKE 1540,INT(A/2
56)
230 POKE 1541,250
240 DATA 104,169,0,141,0,6,173,1,6,133,0,173,2,6,133,1,160,0
,173,10,210,205,5,6,144,4,169,93,145,0,200,192,36
250 DATA 208,239,173,3,6,133,0,173,4,6,133,1,160,0,177,0,201
,93,208,39,169,0,145,0,160,40,177,0,201,138
260 DATA 240,27,201,0,208,7,169,93,145,0,24,144,16,201,128,2
08,7,169,0,145,0,24,144,5,169,1,141,0,6,198,0
270 DATA 165,0,201,255,208,2,198,1,165,0,205,1,6,208,192,165
,1,205,2,6,208,185,96,-1
280 DATA 104,173,1,6,133,0,173,2,6,133,1,160,0,177,0,201,93,
208,4,169,0,145,0,230,0,165,0,201,0,208,2
290 DATA 230,1,165,0,205,3,6,208,229,165,1,205,4,6,208,222,9
6,-1
300 GRAPHICS 0:SETCOLOR 2,0,0
310 DIM MAN$(30),NOMAN$(30),MAN2$(30),BMAN$(30),BMAN2$(30),N
OMAN2$(30),MANX$(30),MAN2X$(30),NOMANX$(30)
320 DIM A$(30)
330 POKE 752,1:HISCORE=0
340 MANX$="  ...  "
350 BMAN$="  ...  "
360 NOMANX$="  ...  "
370 NOMAN2$="  ...  "
380 MAN2X$="  ...  "
390 BMAN2$="  ...  "
400 A=PEEK(560)+PEEK(561)*256:POKE A+3,71:POKE A+6,7:POKE 75
2,1
410 SETCOLOR 2,0,0:SETCOLOR 4,0,0
420 ? "}":POSITION 7,0:? "MONEY":POSITION 26,0:? "runners"
430 POSITION 14,10:? "INSTRUCTIONS"
440 POSITION 1,12:? "RECOVER MONEYBAGS ($) TO SCORE POINTS"
450 POSITION 8,14:? "EACH BAG = MYSTERY BONUS"
460 POSITION 10,16:? "PRESS START TO BEGIN"
470 POSITION 14,6:? "HI-SCORE ";HISCORE
480 POKE 711,(PEEK(711)+1)*(PEEK(711)<255):A=PEEK(53279):IF
A<>6 THEN 480
490 SCORE=0:SCRN=PEEK(88)+PEEK(89)*256:MANX=3:MANY=20:BAGFLA
G=0:MANF=1:MEN=3:TRIES=0:LASTSCORE=0
```

```
500 MAN$=MANX$:MAN2$=MANZ1$:NOMAN$=NOMANX$
510 GRAPHICS 0:SETCOLOR 2,0,0:SETCOLOR 4,15,13:POKE 752,1:?
" "
520 POSITION 0,0:? "  SCORE  00000    RUNS  00    MEN  03
"
530 FOR I=1 TO 20:? " ";:NEXT I
540 GOSUB 750
550 SKILL=1:LASTSCORE=0:POKE 1541,250
560 POSITION 37,22:? "@";:POSITION MANX,MANY:? MAN$:FOR I=SCR
N+920 TO SCRN+960:POKE I,138:NEXT I
570 A=STICK(0):IF A=15 THEN FOR I=1 TO 9:NEXT I:GOTO 610
580 POSITION MANI,MANY:? NOMAN$:MANI=MANI+(A=7)-(A=11):MANX=
MANX+(MANX(3)-(MANX>34):POSITION MANX,MANY
590 IF MANF=-1 THEN ? MAN2$
600 IF MANF=1 THEN ? MAN$
610 IF MANX=34 THEN MAN$=BMAN$:MAN2$=BMANZ$:NOMAN$=NOMANZ$:B
AGFLAG=1
620 X=USR(CODE):IF PEEK(1536)=1 THEN 780
630 IF SKILL=2 THEN X=USR(CODE):IF PEEK(1536)=1 THEN 780
640 MANF=-MANF:IF BAGFLAG=0 OR MANX<>3 THEN 570
650 SCORE=SCORE+(INT(RND(1)*3+1)*100*INT(RUNS/2+1))
660 X=INT(RND(1)*3)*11+6:FOR I=0 TO INT(RND(1)*5):POSITION X
,I+4:? "    DJL    ":NEXT I
670 A$=STR$(SCORE):X=14-LEN(A$):POSITION X,0:? SCORE;:TRIES=
TRIES+1:A$=STR$(TRIES):X=26-LEN(A$)
680 POSITION X,0:? TRIES
690 IF TRIES>5 THEN SKILL=2
700 IF TRIES>LASTRIES+7 THEN GOSUB 750:LASTRIES=LASTRIES+8
710 IF SCORE>LASTSCORE+4000 THEN MEN=MEN+1:LASTSCORE=LASTSCO
RE+4000
720 A$=STR$(MEN):X=37-LEN(A$):POSITION X,0:? MEN
730 POSITION MANI,MANY:? NOMAN$:MAN$=MANX$:MAN2$=MAN2X$:NOMA
N$=NOMANX$:POSITION MANX,MANY:? MAN$:MANF=1
740 POSITION 37,22:? "@":BAGFLAG=0:GOTO 570
750 LINE=SCRN+200:FOR I=LINE TO LINE+360 STEP 40:FOR J=I+6 T
O I+28 STEP 11:FOR K=0 TO 4
760 POKE K+J,128:NEXT K:NEXT J:NEXT I
770 RETURN
780 POSITION MANX,MANY:? NOMAN$:MEN=MEN-1
790 POSITION MANX-1,MANY+1:? "-AARGH-":FOR I=1 TO 500:NEXT I
:POSITION MANX-1,MANY+1:? "        "
800 A$=STR$(MEN):X=37-LEN(A$):POSITION X,0:? MEN
810 POSITION 24,0:? "00"
```

```
820 IF MEN=0 THEN 870
830 X=USR(BLANK)
840 TRIES=0:LASTRIES=0:SKILL=1:MANX=3:MAN$=MANX$:MAN2$=MANZX
$:NOMAN$=NOMANX$
850 BAGFLAG=0:POSITION MANX,MANY:? MAN$:POSITION 37,22:? "@"
:
860 GOTO 570
870 POSITION 35,0:? "00"
880 POSITION 15,2:? "GAME OVER"
890 IF SCORE>HISCORE THEN HISCORE=SCORE
900 FOR I=1 TO 1000:NEXT I
910 GOTO 400
```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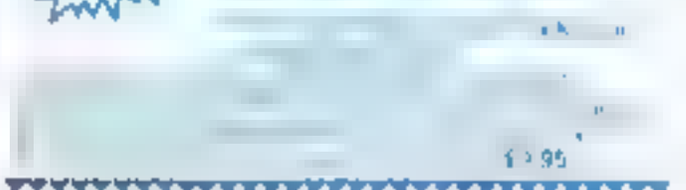

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You are cast as a gladiator fight for your life in a modern-day Roman amphitheatre

In my modern-day version you face not human opponents, but a maladjusted ZX81 whose only ambition in life is to fry you to a crisp on an electrified piece of ground.

Your only hope is to dodge these pieces of earth for as long as possible. Invisible mines are another hazard at higher skill levels

Who knows, maybe the computer will eventually tire of this sport and release you But then again . .

How it works

1-30	set up variables, start game
40-200	main game routine
40	prints man on screen
50-100	prints patches of electrified ground
110-111	pause — very short at higher skill levels
120-160	registers desired movement
170-180	checks for patch of electrified ground where man is about to move. If so control is passed to line 205, else back to start of routine with man in new position
190	adds one to score each time man is moved
195	chackes man has not waled onto an invisible
105-250	end routine, prints score and asks if another game is wanted
1000-1030	handles input of skill level. Note: CHR$ (L+156) prints level chosen in inverse characters
1060-1130	prints arena. Note, edges are made up of CHR$ 8 to stop man moving off edge of screen
1500-1530	ask if instructions are wanted
2000-2110	print instructions with pause for time to read them
3000-3020	choose position for invisible mine
4000-4010	auto start when loaded routine

Variables

S stores score, set to zero at start
L stores chosen level
J K variables which hold position of invisible mine
A B hold position of your man
C D use to hold, test and then print a patch of electrified ground along with its position on screen

Hints on conversion

Lines 170 and 180 are used to test the new position for your man. The two addresses hold the address of the new position. This is in turn PEEKed. If it contains a CHR$ 8 then control is passed to line 205. This could probably be implemented on the Spectrum using SCREEN $.

The ZX81 does not have a standard character set If converting to other machines the figures after the CHR$ commands will need to be changed

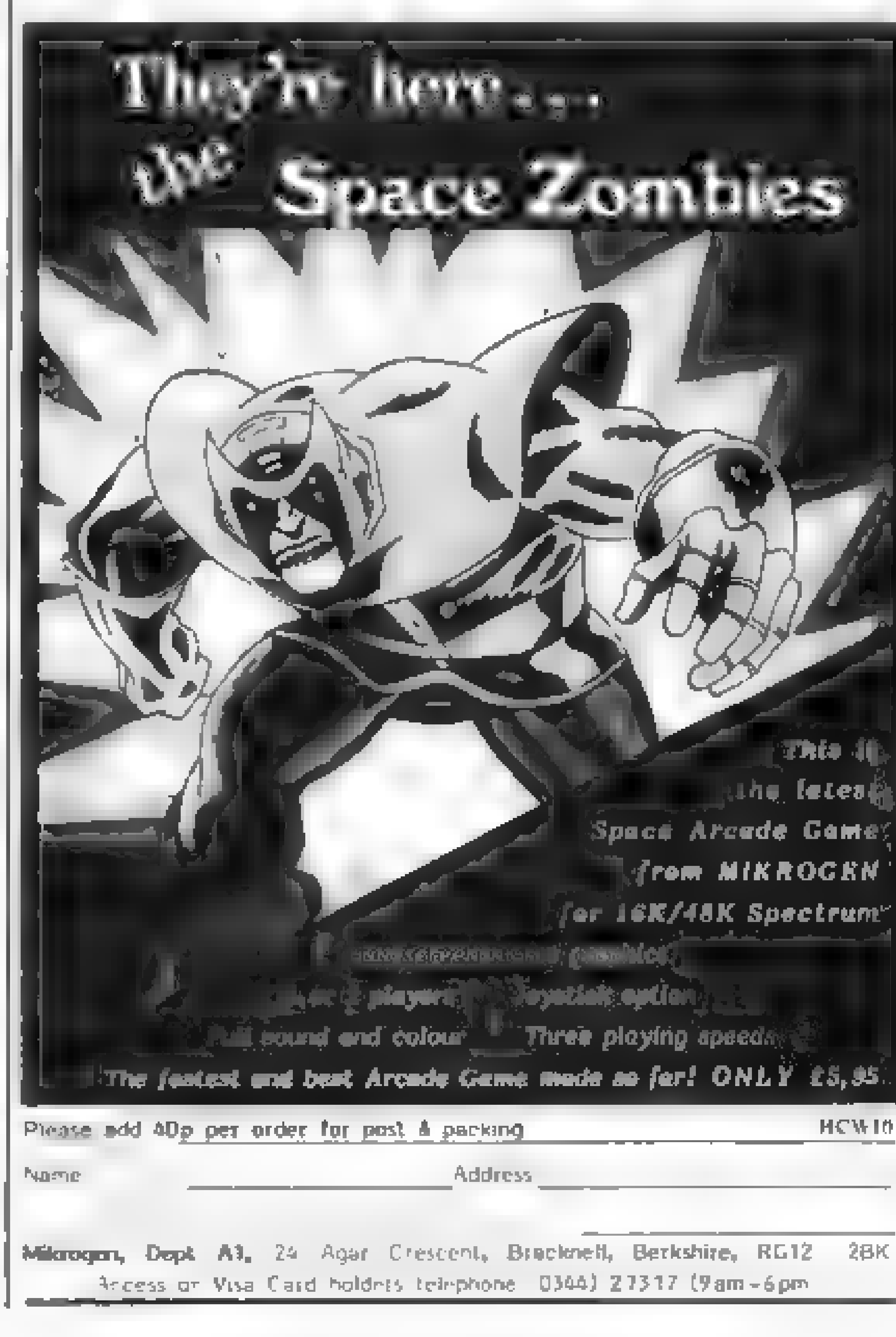
```
   1 CLS
   2 GOSUB 1500
   3 CLS
   5 GOSUB 1000
  10 LET S=0
  15 IF L=1 THEN GOTO 3000
  16 LET J=2
  17 LET K=0
  20 LET A=10
  30 LET B=15
  40 PRINT AT A,B,"▒"
  50 LET C=A
  60 LET D=B
  70 LET C=C+INT (RND*3)-1
  80 LET D=D+INT (RND*3)-1
  90 IF C=A AND D=B THEN GOTO 7
0
 100 PRINT AT C,D,"▒"
 110 FOR Q=1 TO L*2
 111 NEXT Q
 120 PRINT AT A,B," "
 130 IF INKEY$="5" THEN LET B=B-
1
 140 IF INKEY$="8" THEN LET B=B+
1
 150 IF INKEY$="7" THEN LET A=A-
1
 160 IF INKEY$="6" THEN LET A=A+
1
 170 PRINT AT A,B;
 180 IF PEEK (PEEK 16398+256*PEE
K 16399)=8 THEN GOTO 205.
 190 IF INKEY$<>"" THEN LET S=S+
1
 195 IF A=J AND B=K THEN GOTO 20
5
 200 GOTO 40
 205 IF L=1 THEN PRINT AT J,K,"▒"

 210 PRINT AT A,B;S
 220 PRINT AT 0,0,"      ANOTHER G
O....Y OR N...     "
 230 IF INKEY$="Y" THEN RUN
 240 IF INKEY$="N" THEN STOP
 250 GOTO 230
1000 PRINT "INPUT LEVEL-(1 TO 9)
.1 HARDEST"
1010 PRINT
1020 INPUT L
1030 PRINT AT 3,7,"LEVEL
  ",CHR$ (L+156)
1040 FOR Q=1 TO 50
1050 NEXT Q
1060 CLS
1070 PRINT "▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓
▓▓▓▓▓▓▓▓▓▓"
1080 FOR Q=1 TO 20
1090 PRINT "▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓
▓▓▓▓▓▓▓▓▓▓"
1100 NEXT Q
1120 PRINT "▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓
▓▓▓▓▓▓▓▓▓▓"
1130 RETURN
1500 PRINT "    DO YOU WANT INST
RUCTIONS          Y-YES OR N-
NO"
1510 IF INKEY$="Y" THEN GOTO 200
0
1520 IF INKEY$="N" THEN RETURN
1530 GOTO 1510.
2000 PRINT AT 0,0;"▓▓▓▓▓▓▓▓▓▓▓INS
TRUCTIONS▓▓▓▓▓▓▓▓▓▓"
2010 PRINT "▒
▒"
2015 PRINT "▒ YOUR TASK IS TO SU
RVIVE FOR  ▒ AS LONG AS POSSIBL
E IN THE   ▒ ARENA.FOR EACH MOV
E YOU MAKE ▒ YOU WILL BE AWARDE
D 1 POINT. ▒"
2020 PRINT "▒
▒"
2030 PRINT "▒*-*-* *-*-*-*-* *--
-*-*-*-*-*▒"
2040 PRINT "▒
▒"
2050 PRINT "▒ MOVEMENT AS FOLLOW
S.         ▒"
2055 PRINT "▒
▒"
2060 PRINT "▒ 5-LEFT,6-DOWN,7-UP
,8-RIGHT   ▒"
2070 PRINT "▒
▒"
2075 PRINT "▒ IF YOU HIT A ▒ THE
 GAME IS   ▒ OVER AND YOUR SCOR
E WILL BE  ▒ PRINTED ON THE SCR
EEN WHERE  ▒ YOU LOST YOUR LIFE
. AT THE   ▒ HIGHEST SKILL LEVE
L BEWARE OF▒ INVISIBLE MINES...
.          ▒"
2077 PRINT "▒
▒"
2080 PRINT "▓▓▓▓▓▓▓▓▓▓▓INSTRUCTIO
N▓▓▓▓▓▓▓▓▓▓▓"
2090 FOR Q=1 TO 350
2100 NEXT Q
2110 RETURN
3000 LET J=INT (RND*19)+1
3010 LET K=INT (RND*29)+1
3020 GOTO 20
4000 SAVE "ARENA"
4010 RUN
```

▒=GRAPHICS SHIFT A

LINE 40 INVERSE *

LINE 205 INVERSE M

LINE 1090 ▒+30 INVERSE SPACES+▒



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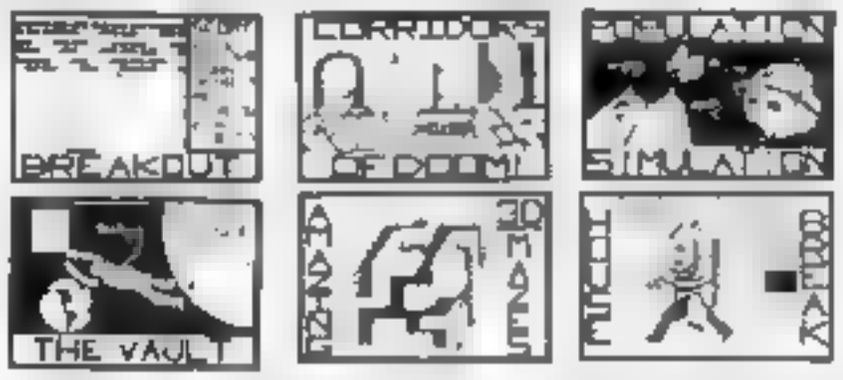

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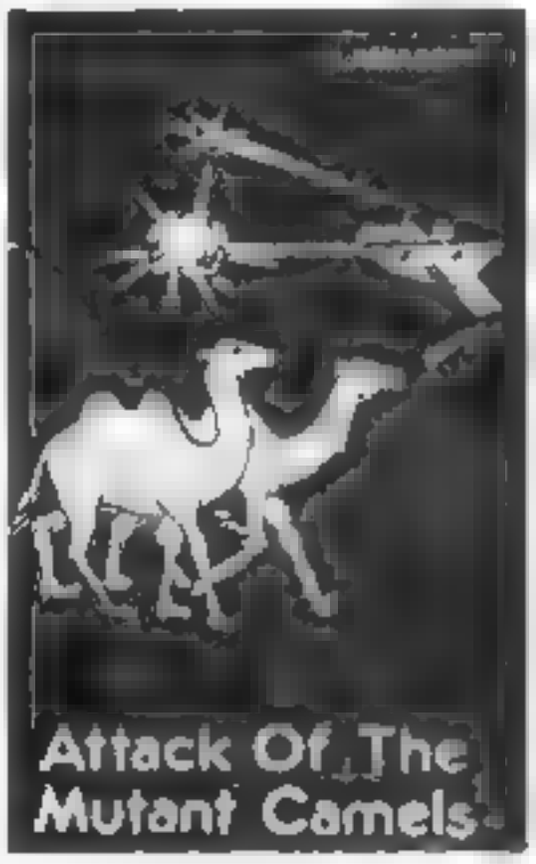
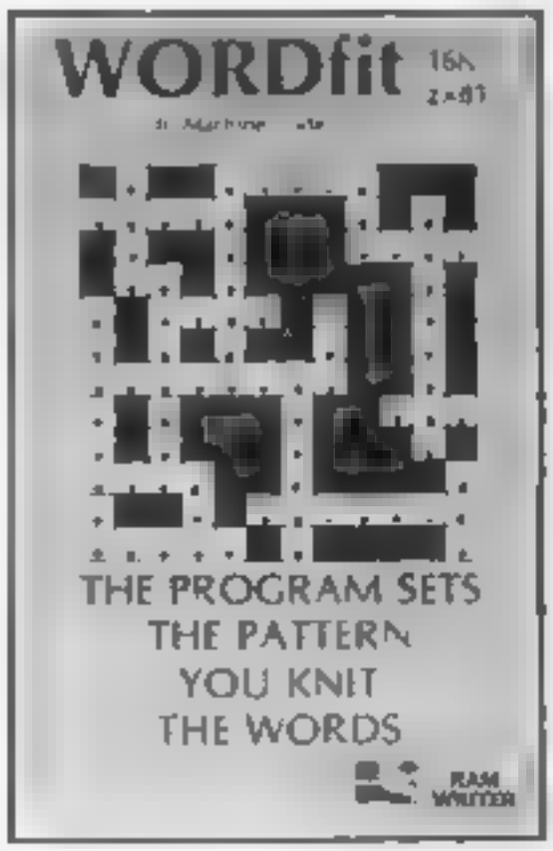
New ideas for your micro

A selection of games which you won't find in your local arcade, tested for you by our panel of reviewers





Attack of the Mutant Camels Commodore 64 plus joystick £8.50

Llamasoft, 49 Mount Pleasant, Tadley, Hants RG26 6BN

"Earth has been invaded by 90-ft high, laser spitting, neutronium shielded death camels." This is the awesome enemy you must battle with in this fast-moving, colourful game in which you pilot a small jet and attempt to wear down the camels' shields and "destabilise" them.

On loading, there appears an impressive animated introduction offering various skill options including a two-player game. Pressing the fire button transports you to a desert landscape on a starry background, where large camels clump noisily towards you rather like the Landwalkers in The Empire Strikes Back

You have to hit the camels with a repeating missile gun while dodging the squealing bombs from their mouths. As you score more hits on a camel, it will turn various dazzling colours before pulsing into oblivion.

Should you succeed in destroying a wave of the beasts, you then enter Trans-sector Hyperwarp, and you must dodge white spiralling rockets as the landscape flashes past at incredible speed. If however the camels reach your end of the sector, you lose the game.

Quite simply a very good game. Sound and graphics are excellent, documentation and instructions are clear, and the action is fast and furious. To play it is to appreciate it. The only criticism could be that it is perhaps a little too difficult!

D.A.

instructions	75%
playability	80%
graphics	90%
value for money	80%

★★★★★

Wordfit ZX81 £5

Ram Writer, 3 Vumba House, 2 Cedar Gardens, Sutton SM2 5DB

I found this program a bit of a mystery — is it a game, or is it a utility? The manufacturer sees it as a game, but it could I suppose be used as an aid to crossword compilation too

All it really does is generate a random crossword-style cell pattern, which you must then fill with any words you choose. But you cannot use the same word twice, and only letters will be accepted.

You can choose betwen four different sizes of grid, the larger ones obviously presenting more of a challenge, and to make things more difficult still the program will if required fill in random vowels too.

Once the grid is full, though, the program does not stop. The cursor goes moving on, and you can alter the words you have already inserted indefinitely until you have had enough

On screen you are shown how many words of a given length are still needed to fill the grid, and how many you have already inserted. But there is no score, as you might expect from a Scrabble-type game; if this is to be marketed as a game, then a score facility might be a good idea

On the whole, I don't think Wordfit makes the most of the ZX81's capabilities. It might appeal if you are a great crossword fan, or want to compile your own crosswords, but most of what it does could be done just as well with a good old low-technology pencil and paper. **C.C-R.**

instructions	60%
playability	40%
graphics	20%
value for money	20%

★★

The Exterminator Colour Genie £7.95

Algray, Algray House, 33 Bradbury Street, Barnsley, S Yorks S70 6AQ

Oh dear, what is this? Based on a fairly weak idea, Exterminator is one of those 'zap-zap' games, apparently written by someone with little imagination in about 10 minutes.

The game is split into two phases. In the first phase your spaceship whizzes about the screen at breakneck speed, as you vainly try to zap little flapping aliens. This in itself is a fairly impossible task as the aliens have guided missiles on their side which fly at you leaving you little chance to get out of the way.

The second phase, however, is a slight improvement. Your craft is now in a safe area at the top of the screen where the alien eggs can be destroyed. Your ship must fly out of this safe area, dodge the mines and guardians, and return to the safe area to destroy the eggs

The controls are very difficult to master and the ship really goes too fast to be ontrolled successfully. In ord to fire, the space bar must be pressed together with the appropriate direction key, which is very difficult indeed. This makes the game awkward to play, and it will soon lose its appeal, if you feel it ever had any.

Really a bit of a disappointment when compared with some of Algray's other offerings. The game is vastly overpriced and is the sort of game that one might like to tap in from a listing in a magazine on a wet winter's night.

I.O.

instructions	30%
playability	40%
graphics	45%
value for money	40%

★

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Make your Spectrum programs sound better

A touch of machine code can add realistic sound. Ian Beynon shows you how

Many people have been quick to point out the limitations of the Spectrum's sound abilities, yet with a little knowledge of machine code realistic sound effects can be produced to enhance even the dullest program.

Start by entering Program 1, taking particular care when entering the line of data.

When you run the program you will first of all hear a series of ascending notes which was written using the BASIC BEEP command. Now press any key and the computer will execute the machine code version

The difference in quality is plain to hear and, if you wish, you can add the following extra line:
50 POKE 30004,0 (Enter and Run)

This line effectively speeds the machine code up a further 10 times.

The nuts and bolts of such a machine code routine are not however, as complex as you might imagine. In fact, to generate a BEEP in machine code only three instructions are required, plus a RET instruction to ensure a safe return to BASIC
They are.

1 Load the DE register pair with a value relating to the duration.
2 Load the HL register pair with a value relating to the pitch
3 Call the routine starting at address 949 in the ROM to perform the BEEP

For those who have never before programmed in machine code, a register can be thought of like a BASIC variable, although it can only hold integers in the range 0 to 255

Unfortunately, such a range is restricting so the designers of the Z80A CPU inside your Spectrum provided us with the facility to combine two registers to form what is commonly known as a register pair.

This is analogous to combining two digits in the range 0 to 9 to represent a number between 0 and 99. Such a facility enables us to assign register pairs with values in the range 0 to 65535

Program 2 will generate a single BEEP. Try running it and altering the values of HL and DE by changing the appropriate elements of data with reference to the disassembly provided

You should find after a bit of experimenting that increasing the value of HL increases the pitch of the note

In fact, all sounds generated on the Spectrum are nothing more than a series of clicks with various length pauses in between. The shorter the pause the higher the note will sound. It is possible to lower the pitch to such a level that each individual click becomes audible

In other words, you are technically loading DE with the number of clicks to be sent to the speaker and HL with the pause between each click.

Program 3 consists of two routines which are called using the commands RANDOMIZE USR 23760 and RANDOMIZE USR 23788. Line 1 is used to store the machine code and must consist of at least 53 characters.

I suggest you enter the program, run it, and then delete all the lines except for line 1. You could then save the remaining line and MERGE it into your own programs. A disassembly of the two routines is provided for those of you who wish to try altering some of the values to produce different sounds

Finally, I have included a mystery program for you to enter and run which should "ring a bell" with you.

Program 1

```
 10 CLEAR 29999
 20 FOR N=30000 TO 30019
 30 READ A: POKE N,A
 40 NEXT N
100 PRINT AT 0,0;"BASIC:"
110 FOR N=10 TO 40: BEEP .01,N:
NEXT N: IF INKEY$="" THEN GO TO
110
120 PRINT AT 0,0;"M/CODE"
130 RANDOMIZE USR 30000: IF INK
EY$="" THEN GO TO 130
140 GO TO 100
200 DATA 6,200,197,17,10,0,33,0
,0,72,6,0,9,205,181,3,193,16,239
,201
```

Program 2

```
 10 CLEAR 29999
 20 FOR N=30000 TO 30009: READ
A: POKE N,A: NEXT N
 50 RANDOMIZE USR 30000
100 DATA 33,0,5,17,0,1,205,181,
3,201
```

Disassembly

```
30000   LD HL,1280      33,0,5
30003   LD DE,256       17,0,1
30006   CALL 949        205,181,3
30009   RET             201
```

Program 3

```
    1 REM  (53 CHARACTERS LONG)
   10 FOR N=23760 TO 23812: READ
A: POKE N,A: NEXT N
  100 DATA 33,80,0,6,40,197,229,1
7,4,0,72,6,0,9,205,181,3,225,35,
35,35,35,35,35,193,16,234,201
  110 DATA 6,40,197,22,0,88,33,23
2,3,205,181,3,22,0,88,33,32,3,20
5,181,3,193,16,234,201
```

Disassembly

```
23760  LD HL,80      33,80,0
23763  LD B,40       6,40
23765  PUSH BC       197
23766  PUSH HL       229
23767  LD DE,4       17,4,0
23770  LD C,B        72
23771  LD B,0        6,0
23773  ADD HL,BC     9
23774  CALL 949      205,181,3
23777  POP HL        225
23778  INC HL        35
23779  INC HL        35
23780  INC HL        35
23781  INC HL        35
23782  INC HL        35
23783  INC HL        35
23784  POP BC        193
23785  DJNZ -22      16,234
23787  RET           201
23788  LD B,40       6,40
23790  PUSH BC       197
23791  LD D,0        22,0
23793  LD E,B        88
23794  LD HL,1000    33,232,3
23797  CALL 949      205,181,3
23800  LD D,0        22,0
23802  LD E,B        88
23803  LD HL,800     33,32,3
23806  CALL 949      205,181,3
23809  POP BC        193
23810  DJNZ -22      16,234
23812  RET           201
```

Mystery program

```
    1 REM  (25 CHARACTERS LONG)
   10 FOR N=23760 TO 23784: READ
A: POKE N,A: NEXT N
  100 RANDOMIZE USR 23760: PAUSE
8: RANDOMIZE USR 23760: PAUSE 80
: GO TO 100
1000 DATA 6,20,197,33,200,0,17,2
0,0,205,181,3,33,200,0,17,40,0,2
05,181,3,193,16,234,201
```


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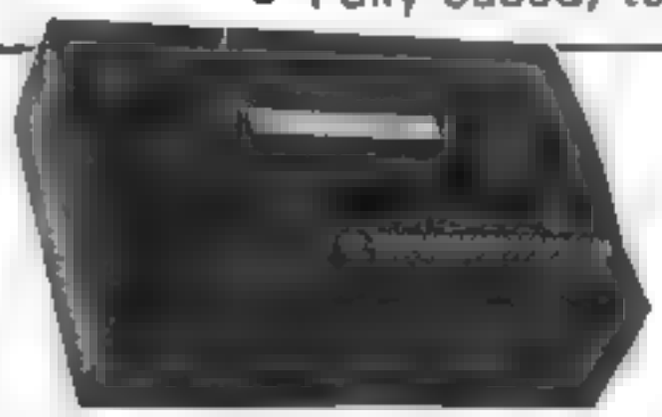

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Spaced-out games for your micro

If you want to be a space adventurer, then these new games may catch your eye. But first, find out what our reviewers thought of them

Frenzy
Spectrum £4.95

Quicksilva, 13 Palmerston Road, Southampton S011 1LL

For years I have been a SF fan, but one book seems to have eluded me; the book of the Faluvian Empire. I became so engrossed with the excerpt from the book on the cassette inlay that I quite forgot it was the program on the cassette that I was reviewing. However I came back to earth, and loaded the program with no difficulty

All the instructions you need appears on the screen, and the key overlay provided ensures that you have the essential commands at your fingertips. . . literally.

When you press start, a maze appears on the screen. This represents the corridors of a space fort, populated with five kinds of robots, who, together with evil Orville, are bent on your destruction. A record of the highest score is kept for reference.

The action is very smooth, and once you have got used to the controls the game is a lot of fun. It would be even better using joysticks.

B.B.

instructions	100%
playability	90%
graphics	95%
value for money	100%

Space Rescue
VIC-20 £6.95

Sumlock, Royal London House, 198 Deansgate, Manchester M3 3NE

Space Rescue is an interesting and unusual game which stands out from the standard arcade games around at the moment.

You have to negotiate an asteroid field, land on one of several landing pads and rescue the poor creatures who are trapped on the planet's surface, battle back through the asteroids and finally dock with the mother ship.

In its early stages the game looks almost too easy, but this quickly changes as the asteroids become more tightly packed calling for greater and greater dexterity to pass through them. As well as controlling over the horizontal movement of the ship, you also have a limited supply of ammunition with which you can destroy some of the asteroids.

There seems to be a bug in the program which occasionally lets an asteroid scroll from right to left through the surface of the planet. While being somewhat disconcerting, this caused no problems in the running of the game. All in all, a good tape, but slightly overpriced. **M.B.**

instructions	75%
playability	85%
graphics	80%
value for money	65%

Cosmic Guerilla
16K ZX81 £5.95

Quicksilva, 13 Palmerston Road, Southampton, S01 1LL

Cosmic Guerilla could be said to be a cousin of Space Invaders, in that you control a moving gun at the base of the screen which zooms to and fro as you attempt to destroy the aliens.

However, the scenario is quite different; the alien 'guerillas' sneak in from both sides of the screen at once, trying to reach the centre where they steal a supply of 'pod' which they then have to take back the way they came.

Thus you have irregular groups of aliens moving independently in different directions at the same time; their movement is in erratic bursts so that it can be difficult to judge when any individual will take his next 'step'. A randomly generated saucer passes periodically across the top of the screen, à la Space Invaders; you get a higher score for successfully hitting this.

Your job is to shoot the guerillas before they return home with their stolen goods. If you hit one on its return journey, its 'pod' will be abandoned there until another alien comes to fetch it; as these black blobs block the energy pulses from your gun the game becomes more difficult as more of them are left lying around.

The aliens can also destroy you with their own bombs (you have three 'lives'). You have shields against these, but as the bombs do not come often and the shields tend to get in your own way, I found that it was a good ploy to blast them out of existence at the beginning of each game.

You have a choice of three speeds, and score is displayed on screen. High scorers can enter their names in a 'hall of fame' at the end of the game.

Having played other games of the same type, I did not find that it held my interest for long; but the sneaky way that the aliens move and their tendency to attack in bunches is a novelty.

The game is well produced, loads easily and runs smoothly; I found that the controls respond almost too quickly — you need a very light touch to position your gun where you want it. Instructions are minimal, but the only controls necessary are Right, Left and Fire. The program can be used with the QS Sound and Characters board, if available

C.C—R.

instructions	40%
playability	75%
graphics	70%
value for money	60%

Cosmic Raiders Spectrum £5.95

Mikro-Gen, 24 Agar Crescent, Bracknell, Berks

A top quality professional product is what I've come to expect from Mikro-Gen, and Cosmic Raiders did not disappoint me.

You have to navigate your spacecraft over an alien terrain of sky scrapers and mountains whilst defending yourself against the deadly attentions of sundry Grubbers, Escorts and Interceptors

Your aim is to rescue abducted humanoids and destroy the aliens' Mastership. Destruction of this latter target automatically moves you to a higher level

The screen display is split, with an inset at screen top showing a panoramic view of your and the aliens positions whilst the colourful main screen display shows a smaller area of the battlefield

Control is via '4' and '2' keys for up and down, 'S' for thrust and '0' for rocket firing. The left hand bottom row keys reverse your direction and the right hand bottom row keys operate a 'Smart Bomb'.

Instructions are concise but adequate and loading is straightforward and reliable

High-quality graphics, and the game is fast and great fun to play. Highly recommended

D.J.

instructions	70%
playability	80%
graphics	80%
value for money	80%

★★★★★

Black Star ZX81 £4.95

Quicksilva, Palmerston Park House, Palmerston Road, Southampton

Funny how rarely ambitious graphics and an exciting game seem to get together. All the Quicksilva games I've played offer either one or the other — which is a lot better than neither, but not as good as they could achieve.

This game has graphics which are always interesting and sometimes dazzling (literally), but it's mostly frills; the game itself is a letdown

You control a space ship flying down a tunnel which unfolds in 3D before you. The object is to bomb "energy ducts" (stripy bands running round the circumference of the tunnel) to gain the maximum points before you run out of time. And that's really all there is to it. Like falling off a log

Unless something was very much amiss with the tape I got, a lot of wishful thinking went into writing the blurb on the cassette insert. The "pursuing aliens" — As which appear at the bottom of the screen, and which you can dodge by moving from side to side — aren't much of a thrill. You can easily avoid them by speeding up slightly, and as far as I can tell they don't do you any harm even if you just ignore them

"Eight instrument displays"...yes, well, the only display you need to worry about is the one that tells you how many bombs you've got left. The rest are very pretty, but really just trimmings.

I don't know about the "seventeen levels" and "progressive difficulty". At no point was I offered the option of selecting a different skill level, so maybe this just means that you can speed the ship up as you get better. You'll get bored extremely quickly if you don't.

Effortless loading, responsive controls, nice effects, and a high-score table, but all this can't compensate for lack of excitement Must try harder.

C.G.

instructions	80%
playability	40%
graphics	90%
value for money	40%

★★

Astro Blaster Spectrum £4.95

Quicksilva, 13 Palmerston Road, Southampton SO11 1LL

Yet another excerpt from the book of the Faluvian Empire was on the inlay card ..I really must get that book

This time we have an old familiar theme. Remember the old Space Invaders? Well, this is a game of that ilk, but with differences that make all the difference if you see what I mean

There are five attack waves, fifteen levels of difficulty, meteor storms plus other bad goodies...or do I mean good baddies?

You can play this game with a joystock if you have one, and I would strongly advise that you do.

This game, together with Frenzy (a sort of sister tape) will make compulsive playing for the space/action addict.

B.B.

instructions	100%
playability	90%
graphics	95%
value for money	100%

★★★★

Martian Raider VIC-20 £9.99

Romik, 24 Church St, Slough SL1 1PT

This is one of those "fly your space ship over the surface of a planet and kill everything you see" games

In essence, as you fly your space ship from left to right over a constantly changing landscape, you are assailed by one of three forms of enemy.

These are either missiles launched from the surface, UFOs or meteorites

The surface of the planet is littered with cities, missiles and fuel dumps. Bombing or lasering any of these items earns you points

You have three ships, each with a limited life span (time left is indicated by a horizontal bar at the top of the screen) and can gain extra time by bombing the fuel dumps. The ships can be controlled by either a joystick or the keyboard.

Overall I felt that the quality of the game was a little shoddy. The animation tended to be jerky and the display of information minimal

Each time a bomb hit the surface, a square chunk (obviously a missing character) was removed. Whilst this didn't effect the play at all, it indicated a lack of attention to detail by the author. In today's cut-throat software market, such details matter.

The pace of play was fast and life could become rather difficult, especially in the UFO phase But I felt that the incentive to win was lacking and the game really amounted to a test of endurance Not a bad game — but not a great game.

A.W.

instructions	60%
playability	80%
graphics	80%
value for money	65%

★★★

FROGLET FROGLET

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All in all it's a great, fast moving game that any number of people can play and, just to add to the spirit of the thing the program stores the top ten players' names so you can measure your performance. How much are we charging for this minor masterpiece? Just £5.99 all inclusive!

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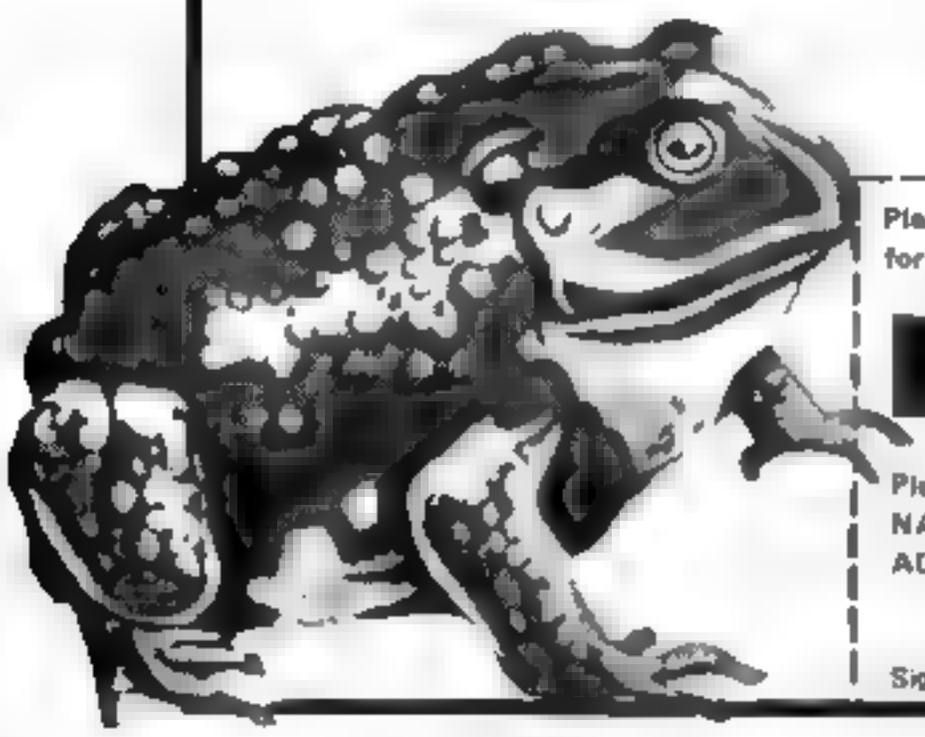

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